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ATARI ST REVIEW

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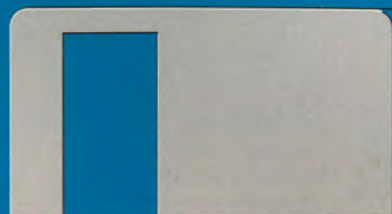
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ST Review Issue 16



ON DISK: Concerto MIDI sequencer • Exclusive Game from the USA! • GEM picture viewer • and more!

INSIDE: DTP in Colour • PhotoCD • Colour Printing • OCR Senior • NVDI • DeskJet 1200 • 14 games reviewed • and lots of tutorials...



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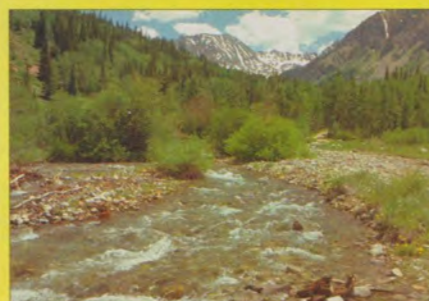
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ENTERPRISE

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Many of this month's articles follow the general theme of colour – from Education through to DTP...



Fourteen games reviewed in this issue including *Reach For The Skies* (left) and *The Patrician* (right).



ON THIS MONTH'S COVERDISK CONCERTO

... one of the best sequencers on the ST at any price! Microdeal's 24-track, 100 pattern commercial package offers unbelievable facilities, including: score editing, piano roll-style editor, separate percussion part creator, synth librarian and a whole lot more!

You can even play back real sounds if you use an STE. *Concerto* will happily work on any ST from a 520 upwards, and in colour or mono. And to get you started, there's a three page tutorial starting on page 10...

PLUS

SEE PAGE 13 FOR:

KABOOM! An excellent conversion of the classic 8-bit arcade game – exclusive to *ST Review*!

FRACGEN: Create, print, save and load different fractals.

METAVIEW: Allows you to see your *Easy Draw 2* pics from the desktop.

KEYSHOW: A desk accessory for Write ON! that shows you the full character set.

PRINTFILE: Select a file and print it directly from the desktop!

AND MORE...



FEATURES

14 PRESS FOR ACTION

Many DTP programs on the ST can work in full colour – Nial Grimes sets about designing some stunning pages with *Pagestream 2*, *Calamus SL* and *Didot Professional CD*.

18 SILVER SNAPS

Fancy seeing your holiday snaps on the TV – or instantly importing them into your favourite art or DTP program? Maurice Collins shows you how with *PhotoCD*...

22 LIGHT READING

Converting a whole load of dots on a page into a coherent bunch of sentences might seem a touch on the magical side, but Andrew Wright discovers that *Migraph's OCR Senior* does just that!

25 FLY LIKE THE WIND...

After a rather inauspicious start, *NVDI* is now the ST's premiere screen accelerator. Ofir Gal gives the latest version the once over...

26 FULL SCREEN AHEAD!

Buying a dedicated display for your ST is essential if you're serious about your work. But are there many variations between the different kinds? Ofir Gal with the answers...

29 PUBLISH AND BE SCANNED!

Colour scanners have plummeted in price recently. Maurice Collins reviews Epson's *GT6500* and considers the power of moving from paper to screen...

32 HOT PRINTER!

How would you like a printer with the speed and power of a laser, but with colour? Over to John Mallinson with Hewlett Packard's latest *DeskJet*, the *1200C*...

34 ON SHOW

What does the ST's colour palette do? How many colours can you see on screen? Answers to these and all of your other questions concerning colour on the ST courtesy of Ofir Gal...

36 FROM SCREEN TO PAPER

What would you do with a colour printer if you had one? John Mallinson considers the possibilities...

42 THROUGH THE KEYHOLE

Keeping with the colour theme, Tony Kaye treks over to see the colour specialists, *System Solutions*...

44 LEGENDS OF A GAMES PROGRAMMER...

So you want to be a games programmer, do you? Find out what it's really like as Vic Lennard speaks with Kevin Bulmer, the man behind *Legends Of Valour*...

48 KOLOR FOR KIDZ!

Can computer programs get children involved with colour? Colin James thinks so...

REGULARS

6 NEWS

Halco lose the distribution of *Calamus*! Plus all the news, charts and a neat serving of *American Pie*...

10 CONCERTO TUTORIAL

Start making music with a little help from Kevin Earley...

38 SUBSCRIPTIONS

Having problems finding your copy of *ST Review*? The answer? Subscribe!

52 MIDI MONTHLY

Two music training programs from Steve Wright and the usual serving of MIDI files from Vic Lennard...

55 SCREEN SCENE

The team are back with advance lowdowns on *Patrician* and *Formula One Champions*, full reviews of *Lemmings 2*, *Firehawk* and *Reach For The Skies*, and all the best budget and public domain offerings...

68 PD ZONE

The best public domain coverage in any ST magazine! We've even added a Falcon-specific page...

81 IN AT THE CHEAP END

Andrew Wright continues his series on getting the best from budget utilities with a whole host of colour and graphics programs...

98 BACK ISSUES

Missed any of our issues? Get 'em now – before we run out...

**WIN A STAR COLOUR
PRINTER – SEE PAGE 28!**

INFORMAL

We don't stand on ceremony here...

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SCREEN SCENE

Go on – treat yourself and enjoy...

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ST BUYER

Tutorials, your letters and our experts – all in one section...

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**NEXT MONTH'S ISSUE
ON SALE AUGUST 19**

SUPPORT OUR PROGRAMMERS!

There is a growing trend within the ST market that is rather disconcerting, but before I speak my mind and upset various companies let me take you through the early years of Atari software.

The support for the ST in the embryonic days was nothing short of incredible with the "power without the price" idiom encouraging many UK-based developers to author good quality programs. Timeworks and 1st Word Plus led the way in their particular fields and various music, art and utility packages also boasted the 'written in the UK' tag.

But what is the situation now? Except for HiSoft, almost all software of note is being created in Germany. No-one should be surprised by this bearing in mind the way in which Atari has cultivated the German market. Acorn carried out a similar course of action in the UK by ensuring that nearly every educational establishment carried their computers, but failed to keep shop prices low enough to persuade users to buy the machines. Atari has not made this mistake in Germany, hence the overwhelming support for the ST, TT and Falcon.

It is impossible to allocate any degree of blame to UK distributors of such software. This is a marketplace in the real world and you sell whatever is available to you provided that it turns a profit. Without the German market, we would be deprived of high-end products such as Calamus, Didot Professional, Cubase and Notator to name but a few. But what of the home-grown



programmers? Who is nurturing them?

The more naive among us might consider that the shareware market offers a perfect opportunity for such programmers to peddle their wares, but let's be honest: how many shareware programs do you use? And for how many of them have you paid the registration fee...

Typically, software companies are complaining that the ST market is dead and no longer worth supporting. I disagree. While Atari's sales have certainly slowed, there is an enormous user-base – and one that will not disappear overnight simply because some owners sell their machines to purchase a Falcon, PC or Mac. Every person who sells their ST to purchase a different computer leads to another ST owner, and the second-hand market is thriving. What of this new blood? Aren't they worth supporting?

Given the current economic climate, there may not be a suitable solution to this quandary, except to drive ST programmers off to pastures new... such as the PC, Mac or a dedicated games console. Their gain will certainly be our loss.

My trip to Synthetic Dimensions to interview the team behind Legends Of Valour, highlighted in the One Man And His ST article on page 44, was a real eye-opener. I had expected to find an amateurish set-up with a couple of boffins beavering away on the programming side and some manic enthusiasts handling the gameplay.

Nothing could have been further from the truth; Synthetic Dimensions is a thoroughly professional graphics design company that happens to specialise in games. To say I felt humbled when I left the building is an understatement...

Vic Lennard
Editor

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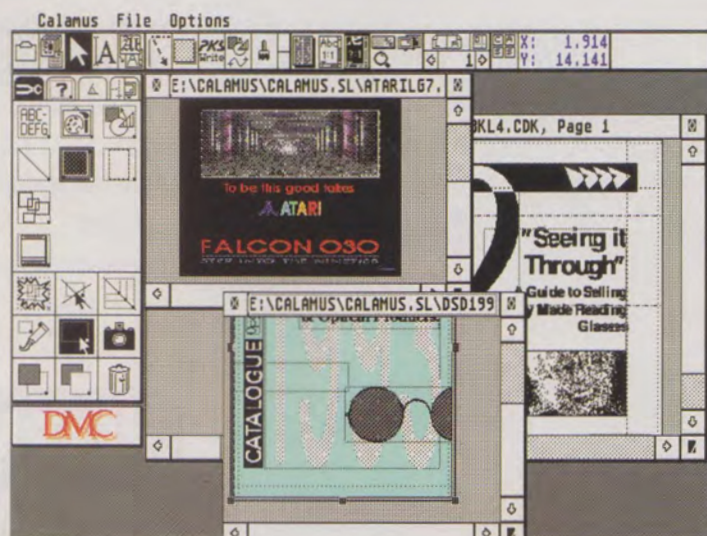
CALAMUS HAS NEW DISTRIBUTOR

JCA (Europe) Ltd have been appointed as the new distributors of Calamus in the UK.

Following many rumours and whisperings in the trade, it has finally been announced that the distribution rights have been taken away from Halco.

The new company is headed by John Craig, who has substantial experience in the printing industry as a consultant, working with companies like Crossfield, Du Pont and Quantel. John's son, Alistair, worked for Halco and has experience of the product and the market.

Alistair, who also runs Riverdene PD Library said, "We are delighted to take on Calamus. It is a natural progression from the PD market for us. We hope to be able to make more people aware of the product and support all Calamus customers, old



Calamus – new UK distribution.

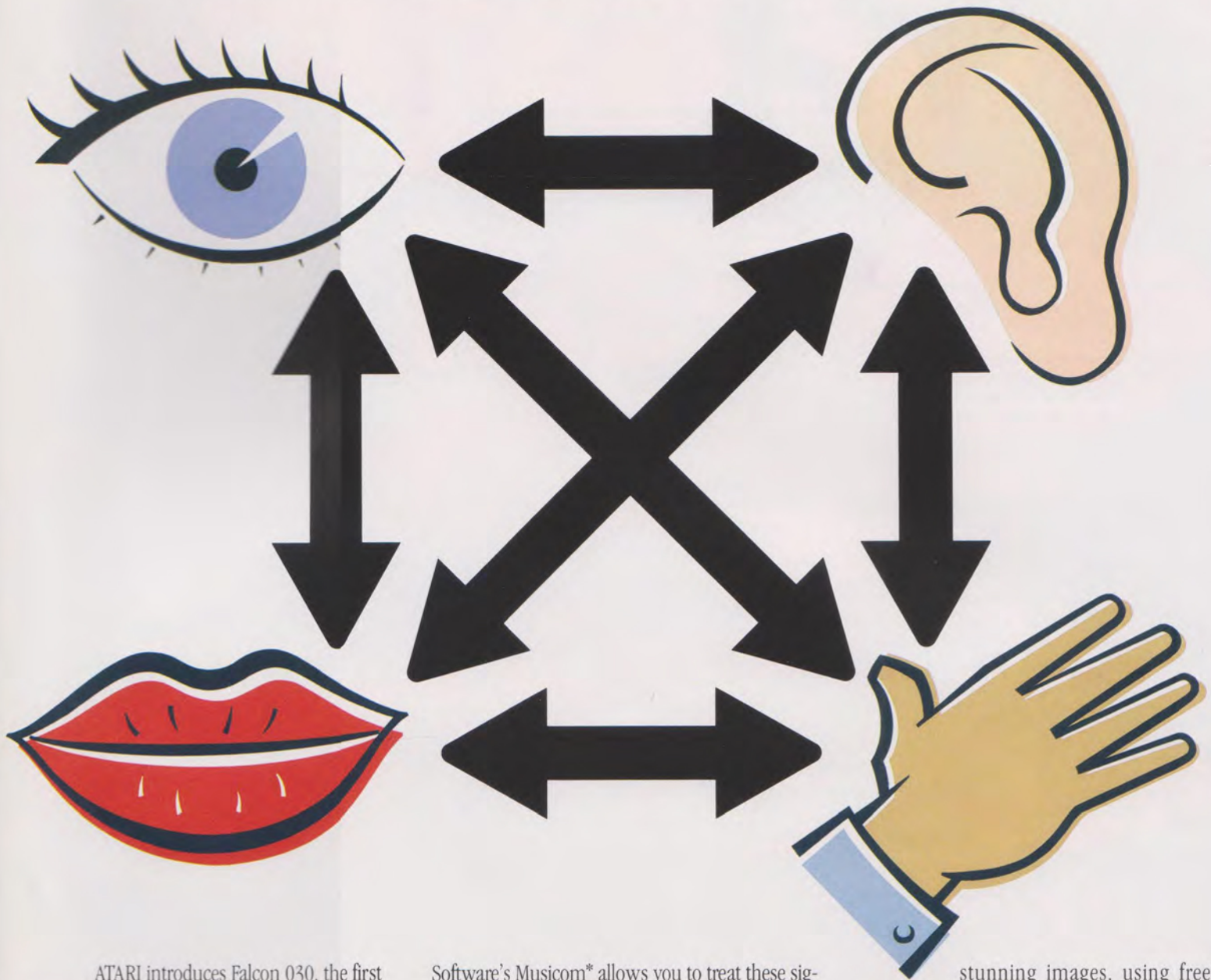
and new. "The support for the range has never been stronger, with the imminent release of Calamus 5 version 2. I would like to stress that we are not a new company and have experience in the trade and we will continue to offer a professional service."

To further support Alistair's enthusiasm, there are two new printer drivers available for the product – the Hewlett Packard Laserjet4 at 600dpi and the Canon CLC10 colour laser printer/copier/scanner.

Calamus SL is a DTP package that offers full colour separation and professional quality output. There is also a "consumer" version, Calamus 1.09N that sells for £129.

More information available from JCA (Europe) Ltd, 30a School Road, Tilehurst, Reading, Berkshire RG3 5AN. Tel: 0734 452416.

If you understand this, you understand the Falcon.



ATARI introduces Falcon 030, the first ever micro computer which instantly communicates with all your current and future audio-video equipment. Now, TV, Monitor, HiFi, CD, CDV, R-DAT, DCC, VHS, telephone, synthesizer, photo CD, camcorder, printer, modem, ... communicate with each other, allowing you to get the most out of each piece of equipment. A true technological revolution, Falcon 030 is operated by a 68030 processor working in parallel with a DSP, which is able to treat digital data at a very high speed.

Falcon Audio, the universe of Direct to Disk: Falcon 030** offers, as standard, "Direct-to-Disk" recording, from a microphone (voice or instrumentation), a Walkman or a HiFi, via a simple stereo plug and also through its MIDI interface. Compo

Software's Musicom* allows you to treat these signals at better than CD quality: equalizer, Digital Delay (echo), harmonizer, flanger or even karaoke.

Falcon Video, manipulating images: Falcon 030 can be connected to almost any

stunning images, using freehand drawing, lines, shapes, patterns, perspective, colours, and even create animations which can be stored on video. **Falcon Photo, a personal**

computer studio: Thanks to Studio Photo* from Euro-Soft, the Falcon 030 treats digital photos in all formats, including Kodak CD, allowing special effects and retouching. **Falcon Software:** Falcon 030 already benefits from a wide range of innovative software and now, using

Falcon Speed* from Sack Electronics you can run MS-DOS programs on your Falcon 030. For more information write to: ATARI Corp. Ltd, Railway Terrace SLOUGH - BERKSHIRE-ENGLAND SL2 5BZ. Software by Compo, Euro-Soft, OverScan Sack Tel.: 0480 891819, by Hisoft Tel.: 0525 718181.

FALCON 030
ATARI

video source. With OverScan's Overlay* and Genlock* you can add titles, animations, sound to your videos and generate presentations combining a slide show with sound. **Falcon Graphic, a choice of 65,536 colours per pixel:** With Hisoft's True Paint*, you can produce

Now, all that communicates communicates.

NEWS

ST UPDATE

The ST Club have announced upgrades for five of their products.

PageAssistant v2.0, the electronic book accessory from Spar Systems in New York, now covers **PageStream** version 2.2. All online tutorials have been updated and now include v2.2 information. Tips and Tricks are two new menu items, showing how to create bar codes, suppress an area from printing, add leader tabs and much more.

Price is £29.95 for the full package and £7.95 for the upgrade which includes an eight page manual addendum.

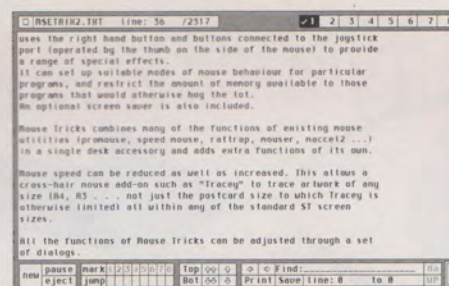
CalAssistant now includes new topics covering frame types, clipboards, working with text, master pages, layout tips, special design effects, text macros and frame modes. It is also completely upgraded to support **Calamus 1.09N**.

The upgrade is available for £5.95 including a new 40-page manual and the full package is £19.95.

The mouse enhancement package, **Mouse Tricks 2.15** has two major improvements – a large screen facility

now supporting TOS 1.04 as well as 1.6x and the ability to use a PC mouse with your ST!

The large screen display is slightly sluggish, but the new mouse driver allows the use of a three button PC serial mouse. You can also use the right mouse button in a program for its original intention and still have the



Mouse Tricks; version 2.15
lets you use a PC mouse with your ST...

button shared by using a longer click. Users of Codehead's **HotWire** will find a new version of **Hot_MSE.PR** on the disk as well.

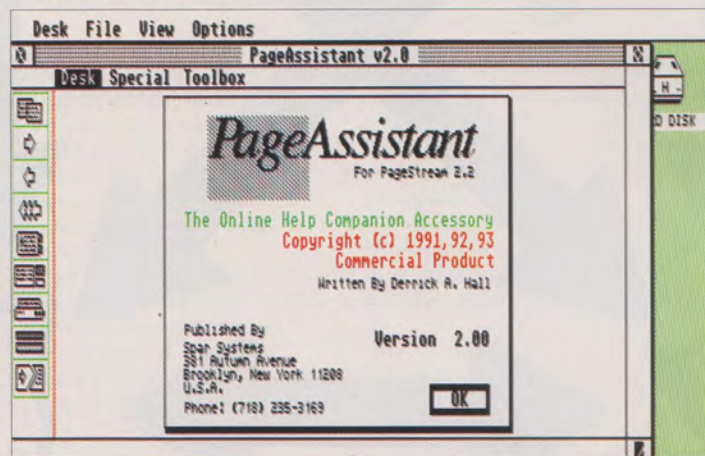
Cost? £9.95 for the full package and just £2.50 for the upgrade.

For the same prices as **Mouse Tricks**, **Multiprint** has been upgraded to version 1.04. The new release can

now capture **Fontprint** BIOS output and has a new, more reliable version of **MUL_GRAB.PR**. A "Fast Print" parallel port output option is offered and you can bypass the program altogether using the new "Thru" facility – useful for passing the printer data on to the BIOS or installed AUTO programs.

Matthew Carey, author of **Fonty**, the **Calamus** font editor has been sending weekly updates to the ST Club and the latest version is v1.03. As the upgrades have been in steps of .003, the latest has had quite a few major changes. Price is £11.95, or £2.50 for the upgrade.

For more details of any of these products, contact the ST Club on 0602 410241 or write to them at 2 Broadway, Nottingham NG1 1PS.



PageAssistant v2.0 – one of the new releases from ST Club.



Charts supplied by:

CHARTS

Five new entries prove that the ST games market is still alive and kicking...

POS	LAST MONTH	GAME	PUBLISHER	PRICE
1	6	LEMMINGS 2	PSYGNOSIS	£29.99
2	9	SENSIBLE SOCCER	MINDSCAPE	£25.99
3	NE	CHAMPIONSHIP MANAGER '93	DOMARK	£25.99
4	NE	CHAOS ENGINE	RENEGADE	£25.99
5	3	SILENT SERVICE 2	MICROPROSE	£34.99
6	4	SECRET OF MONKEY ISLAND	US GOLD	£25.99
7	2	F1 GRAND PRIX	MICROPROSE	£34.99
8	1	CIVILIZATION	MICROPROSE	£34.99
9	5	MICROPROSE 3D GOLF	MICROPROSE	£34.99
10	8	PREMIER MANAGER	GREMLIN	£25.99
11	7	ISHAR—LEGEND OF THE FORTRESS	SILMARILS	£29.99
12	NE	B17 FLYING FORTRESS	MICROPROSE	£34.99
13	11	LEMMINGS	PSYGNOSIS	£25.99
14	NE	PRO TENNIS TOUR 2	UBISOFT	£25.99
15	10	KNIGHTS OF THE SKY	MICROPROSE	£34.99
16	17	AIR & SEA SUPREMACY	UBISOFT	£30.99
17	12	STREETFIGHTER 2	US GOLD	£27.99
18	NE	KNIGHTMARE	MINDSCAPE	£9.99
19	13	SABRE TEAM	KRISALIS	£25.99
20	14	TRANSARCTICA	SILMARILS	£29.99

AMERICAN PIE

While Atari were certainly "Born In The USA", how well do retailers support them?



Summer is officially here and Atari has taken the time to launch a new product! The much talked about Sega/Nintendo killer has officially been launched with an impressive verbal campaign. In a recent Real Time Conference (RTC) on the Genie bulletin board, Bob Brodie was given the go-ahead to announce a Fall test market in New York followed by a national roll out of the Jaguar within a year. With its 64-bit RISC processor, 16 million colors in 24-bit true color, high speed 16-bit stereo CD quality sound and \$200 price tag, the Jaguar does indeed have the power to out-muscle the competition. Problem is – does Atari have the marketing power to really make a dent in the Sega/Nintendo universe? We'll know... in about a year.

Hey, us Americans have it pretty good as far as Atari dealers go. According to Bob Brodie we have 140 Atari dealers spread out through 40 states! And that figure is said to be better than last year's numbers. Hmm... that averages out to about 3.5 dealers per state. I'll behave and let this one speak for itself.

In a related note, it appears that the Falcon030 will also be sold through distributors! This should make it more accessible to smaller dealers. It should be noted though that the no mail order rule seems to be holding for now – all dealers who are to sell the Falcon MUST have a retail store. According to some lucky users who managed to track down a Falcon at their local Atari dealer, they were treated to a pleasant surprise. The hard drives that are in the Falcon have been upgraded to 80 meg units! This extra 15 megabytes of storage is a welcome surprise especially at no extra retail cost. Now if only the next nice surprise is a 32MHz 030 instead of the slooowwww 16MHz one. Did I say slow? I've heard about some nice fast-running true color graphic demos, but I've also heard from users that the Falcon's video is not the fastest in the windowing environment.

I was going to report on the conversations with several Atari retailers over here about the current status of the Atari market, but due to some serious gloom-and-doom speculations I've decided to cancel that for now. Out of six dealers I talked with, not one was upbeat or happy with the current status of the Atari market. Everyone agrees that the marketing of the Falcon will represent a make or break time for Atari. Maybe next month, after about three summer Atari shows take place, there will be some upbeat news to report.

The summer situation isn't that bad for at least one dealer I chatted with. According to Doug at Rising Star Computers, after expanding into the service end of things he's actually had one of the best summers since he began trading! I won't mention that he's getting an awful lot of customers wanting to trade in STs for PCs...

There just aren't a lot of happy Atari folks over here right now. Everyone agrees that the Falcon is a fantastic machine, but one dealer I chatted with put it in a nutshell: "With Falcon, 486 PC and Mac II systems all in the same price range, I'm having one helluva time convincing them to buy an Atari..."

Until next time...

Dave Munsie, as an Atari freak in the USA, is a rarity – much like a voluntary Archimedes user in the UK. If you're wondering how we get his column, it's transferred via modem at 11am our time which is about five in the morning in Texas. The hours these programmers keep...

ATARI "BEEF UP" HARD DRIVES

Atari Falcon buyers will soon find a valuable extra in the box – an additional 15 megabytes of hard disk at no extra cost.

As has already been discovered by our US correspondent, Dave Munsie, new machines are being fitted with 80 megabyte drives as standard. This is due to keen buying in Taiwan, as revealed by Darryl Still, Atari's Marketing Manager.

The new one megabyte machines are also due in the next few weeks, making Atari confident of reaching their target of 50,000 Falcons sold by the end of the year.

SPEED FOR LESS

Compo have announced a price reduction for the PC Speed emulator. With a Norton Factor of four, the PC Speed board has been reduced from its former £99 to just £55. This makes it ideal for running basic PC software like Word Perfect and Supercalc, but not Windows applications.

Neal O'Nions of Compo said, "This will put the cost of emulation within a lot more pockets. At £55, it's not a lot more than a top game!"

UVK NOW KILLS MORE VIRUSES... DEAD!

In March of this year, a new virus was discovered, and one with dire consequences for practically every Atari owner. *Beilstein* mimics an MS-DOS bootsector, such as one placed on a disk by formatting under TOS 1.04 or above, and uses various methods to evade detection. In all, it can exist in one of over 65,000 guises.

Once transferred, it has TWELVE destruction routines that vary from resetting your computer to zapping an entire hard drive partition. Even so-called "virus-free" bootsectors are handled.

UVK version 5.9 can now recognise any incarnation of *Beilstein* and also has some nifty enhancements, including the ability to run as a desk accessory, and is fully Falcon-compatible. Up to 658 bootsectors can now be repaired and UVK will recognise over 1,400 viruses.

The price? Just £7.99 from ST Review's Reader's Offers – see page 41.

UVK extensive system check.... Blitter Activated		GDOS Installed	
TOS version: 2.06 TOS date: 11-14-1991		GEMDOS version: 2.0 Turbos Off	
Memory configuration/trap vectors:		System variable contents:	
Memory configuration	: 4 Mb	Resvector	(\$42A) : \$026BD6 (48)
Top of physical RAM	: \$400000 (1)	Hdv_init	(\$46A) : \$E0518E (1)
Bottom of user RAM	: \$00CCB2 (1)	Hdv_bpb	(\$472) : \$00CFA2 (77)
GEMDOS trap #1 vector	: \$1092D2 (1)(GC)	Hdv_rw	(\$476) : \$048A08 (69)
BIOS trap #13 vector	: \$0443D0 (2)	Hdv_boot	(\$47A) : \$E0593C (1)
XBIO trap #14 vector	: \$026ABA (macc)	Hdv_mediach	(\$47E) : \$04414A (7)
Floppy-hard-or RAMdisks attached (0=not attached; 1=attached)			
ABCDEFGHIJKLMNOP ~~~~~ 1111111100000000			
REVERSE = Suspicious! Refer to manual for explanation of numbers			
Free TT RAM present: 0 Kb			
No reset-proof programs in memory!			
No Virus in Keyboard Processor!			

UVK; no excuse not to practise safe computing...

Fully-featured music programs are difficult to come by at any price. Microdeal's *Concerto* broke the mould last year when it was released for just £40 – and now it's on our cover disk...

SUMMER CONCERT-OH!

Concerto offers unbelievable features for a budget sequencer; score editing facilities, a separate drum part creator, piano roll-style editor, synth librarian and so on. Also included in this feature-packed bundle is the ability to play samples on an STE. This ability alone sets it aside from its peers and although sample play-back is only monophonic, the usefulness of this is not to be taken lightly. If you don't need samples, this program will work in mono or colour on any Atari system, including the new Falcon.

Although the editors are not as powerful as those in expensive rivals, their mere inclusion in a package this cheap is a minor miracle. Even "search and replace" editing of a single note value can be achieved with a couple of key strokes! *Concerto*

uses a pattern-based arrangement system where small chunks are arranged like building blocks into a complete song. Each song can be up to one hundred patterns in length which should be enough for a, err, *Concerto*!

THE GUIDED TOUR...

Concerto is similar to most other pattern-based sequencers, where each pattern is given a start and end point, and a name. Each pattern, and the tracks it contains, becomes a building block that can be moved and changed at will. Edits can be performed on individual notes, a track, a pattern or the entire song. The quirky thing to watch out for is that a **Pattern** in *Concerto* has its start and end points defined by bar numbers,

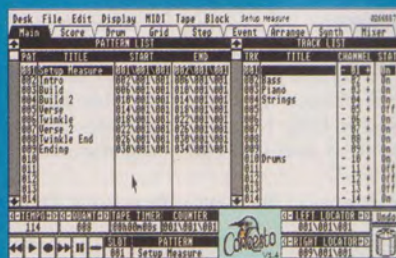
but may share these points with many other patterns. This can look confusing until you realise that each pattern only uses locator points to define its length and not its position.

Concerto's **Transport** controls are based on a typical tape machine and have keyboard short cuts; <R> for Record, <P> for Play and <spacebar> for Pause. <Enter> takes you instantly to the start of the pattern or song.

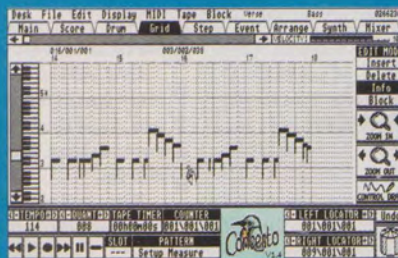
There are many ways to edit the notes within patterns, and access to the editors is found along the top of the screen via the "filing card" system.

Most of you will jump straight to the **Grid Editor**, where notes are displayed as horizontal bars that scroll in a "piano roll" style from right to left, while the keyboard is displayed vertically down the

GOING WALKABOUT AROUND THE EDITORS...



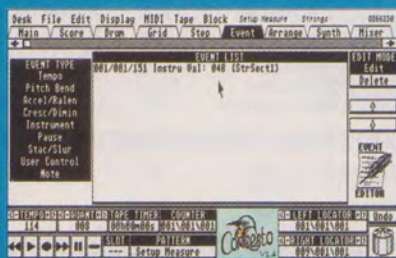
Concerto's main screen showing the tracks for the current pattern.



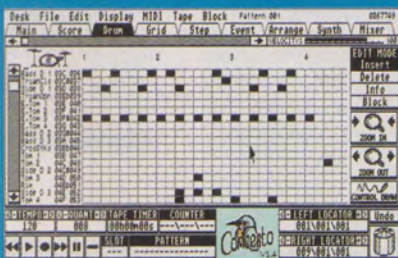
The Grid editor lets you alter notes with ease with its "piano roll" style.



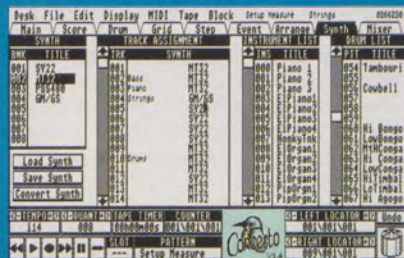
More difficult musical lines can be entered one note at a time in the *Step* editor.



If you're into numbers, check out the Event editor – powerful, but a little awkward to use.



The Drum editor is perfect for creating percussion and rhythm tracks...



Rather than select the sounds in your synth by numbers, the Synth window lets you call them by their names!

left-hand side. Notes can be inserted or deleted with the mouse, and using the "Info" function, clicking on any note (displayed as black boxes with tails), will reveal its Position, Pitch, Length and Velocity in a pop-up box, where they can be viewed and edited. If you have the necessary patience, this feature gives total control over the subtle nuances of "feel" necessary to give life to a song.

If you aren't a virtuoso on the keyboard, try **Step Edit** where notes are entered one at a time, using your synth keyboard or mouse as you step through the pattern, or **Event Edit**, which lists the MIDI information as numbers.

Finally, **Score Edit** allows those who prefer to work with notation a similar depth of control, displaying the score in various split and single-stave modes.

Two screens are unique to *Concerto*. Using **Synth**, you can type in the names and numbers of all the sound patches on your synth(s) and although this has a high yawn factor, it's worth the effort as it allows you to select patches by name elsewhere in *Concerto*. Up to eight synthesisers are supported and each track can be assigned to a different one.

This really pays off when you use the **Mixer** screen, where instruments (sound patches), are displayed using these names, and also by MIDI Program Change number. Using 16 horizontal sliders, it is possible to enter MIDI Controller data, Pitch Bend, Tempo and Program Change in real time, while *Concerto* is running. Good, eh?

If you're smart and enter the Drum Instrument names and note numbers into the **Synth** screen, you can take advantage of this in the dedicated **Drum Editor**, where notes are displayed in a similar way to Grid Edit, but each drum note is named. It's a doddle!

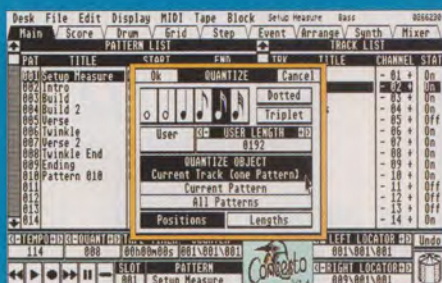
LET'S PLAY!

Enough talk – the best way to learn something is to do it. But before you start, back up the cover disk by using the STRBAKUP.PRG (see page 13).

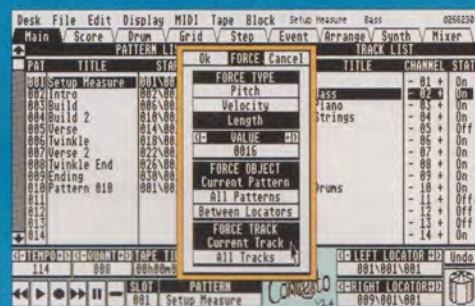
To run the program, double-click on *CONCERTM.PRG* for mono or *CONCERTC.PRG* for colour – these are in the .MON and .COL folders. You will see *Concerto*'s main screen, empty and ready for your new masterpiece. Before starting recording you need to set things up for your keyboard or sound module. Under the MIDI menu, choose MIDI Click. If you have Roland or General MIDI drums, set up the metronome on channel 10 and note number 37, with high velocities. Under the Tape menu, choose Record Count In, and set it to quarter notes for one bar. Then choose Play Pattern and turn Cycle on. *Concerto* will now cycle round only the currently selected pattern. So we'd better create one...

It's a good habit to use Pattern 1

CHECK THESE OUT...



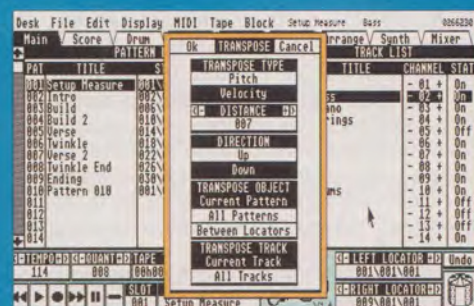
Concerto's main screen, showing the Quantise box – useful for correcting the timing of your playing.



Short notes on the drum track can be "Forced" to fix their length...



Starting a pattern is simple – just set the locators and select Create Pattern from the menu...



... or velocities of notes can be tweaked up or down by pattern or track.

to set up the tone generator. Set the left locator at 001/001/001 and the right locator at 002/001/001 (the numbers are in terms of bars/beats/ticks). From the Edit menu select Create Pattern. Click on OK to select the default time signature of 4/4. This creates a one bar pattern in which to record program changes and the like that set up your synth or module. Go to the Mixer screen, select Instrument, click on the "Record Mix" box, then press [P] to play. As *Concerto* cycles, click the mouse once on the horizontal bars of tracks 2,3,4 and 10, this will insert a programme change on each of these tracks. Press [P] again to stop.

Now go to the main screen and choose track 2 (click on the track number to select it) and in the blank area on the right, name it "Bass". From the Event Editor, set a program change number to select a bass sound on your synth. Repeat these steps for track 3 (piano), 4 (strings) and 10 (drums).

That's the boring bit – let's record some real music. On the main screen select pattern 002. Set the left locator to bar 2 and the right locator to bar 6 and create another pattern. Give it an original, witty name like "Intro"!

Next, choose the Bass track, press the <Spacebar> and then <R> and <P> – we're set to record. When you are ready, press the <spacebar> again and after a one bar count in you will enter record mode, which cycles until you press the <spacebar>

again. A small quirk is that you'll also have to press <R> and <P> to turn Record and Play off again, or click on the relevant buttons on the transport bar. After you have played your bass line we can change tracks and repeat this process again for the Piano and Strings. Assuming you have made the odd mistake, go to Grid Edit, press <P> and listen out for the bum notes. Stop *Concerto* and use the scroll bars above and beside the display to find the appropriate bar. You can choose to correct a wrong note or delete it. To correct it, select Info on the right of the screen with the mouse and click on the note once. A box appears containing all the information about that note. Use the scroll arrows to change the values or click on the number and type it in. Press <Return> when you have finished. If you want to delete an entire track, drag it to the trashcan in the lower right corner.

For the drum track, we'll use the Drum Editor. Here, you can place drum notes on the grid with the mouse. Info works the same as in Grid Edit; use the Velocity bar at the top right to choose the velocity of each note before you place it. The Zoom buttons let you see whole patterns or fine detail. Each drum note is named on the left hand side of the screen, making it easy to create complex rhythm patterns. A hot tip – use Force on the edit menu to set drum note lengths to 16 ticks as keeping notes short

maximises the polyphony of your sound module.

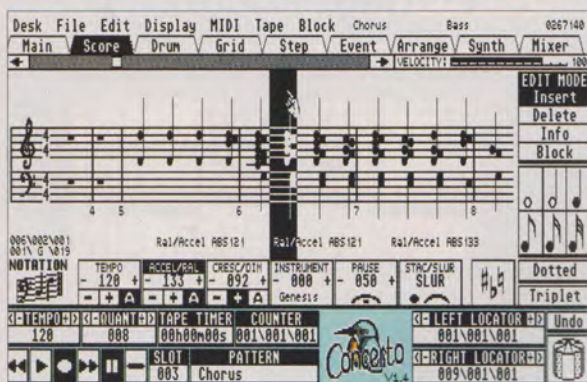
Set the locators to bars 6 and 10, and create a new pattern on the Main screen. This will be the Verse. Record some more notes in real time on each of the tracks we're using, correcting mistakes as you go using Grid Edit. Don't forget to add some drums too.

If you want to sound really flash, the Step Editor can be used to create fast Arpeggios. It's also great for Acid House bass lines! Simply select the length of note to insert and either play notes in one at a time or use the mouse on the "virtual keyboard" at the top of the screen. If you work with musical notation, see the Score Editor box.

By now you should be getting the idea. By recording most of your song in real time and editing the complex bits using the appropriate editor, your songs will retain a good "feel" and still be interesting. The last major goodie is the **Controller Drawer**. When in Grid or Drum Editor a click on the Control Draw button allows MIDI controllers to be drawn onto a dedicated panel at the bottom of the screen – perfect for Crescendo and the like by using MIDI Volume (Controller #7).

When you have created all the Patterns you need, simply place them in the correct order on the Arrange Page's Sequence List. When you are ready to try out your song, turn off Click and Cycle and set the Tape menu to Play Sequence. Hey presto – your very own song.

WHAT'S THE SCORE?



Using the mouse, you can drag out a section of the score...

Concerto's Score Editor works in essentially the same way as Grid Edit, except that notes are displayed in the traditional way on single or split staves. Musical events such as slurs can also be inserted, as well as selecting from symbols for crochets and quavers, sharps and flats, pauses, and tempo changes.

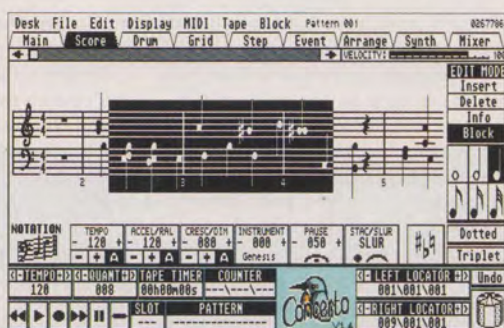
As with all of Concerto's editors, the block command can be used to edit several notes together. To select a block of notes, choose the Block command from the right hand box and then drag out a box around the block of notes you wish to work on. Now use the Block menu commands to copy or move the selected notes to and from the buffer where they are stored.

To create more human sounding music, try adding an Accelerando (dead flash), where a Tempo Change happens over a period of time. In the Score window, click on the Accel/Ral box and then choose the amount of speed change required. Use the mouse to select the start point for this effect by clicking it on the score window.

Drag the mouse to the right to select the period during which the Tempo change happens. When you let go, the "Accel" will be shown on the screen, underneath the note display, with the value you chose in the Accel/Ral box.

For a program such as this, the Score Editor has enough functions to be a really useful addition to the first time user, without being too daunting.

... and then cut, copy and paste it, much the way you would with a word processor.



GET THE MANUAL FOR JUST £9.95!

Concerto is packed so full of features that our tutorial has only scratched the surface. If you want to get the best out of this package, it's well worth buying the manual, especially as it only costs £9.95 plus £1 p&p.

Simply fill in your name and address below and send the completed order form with a cheque or postal order for £10.95 to:

Microdeal, The Old School, Greenfield, Bedford MK45 5DE.

Name.....

Address.....

.....

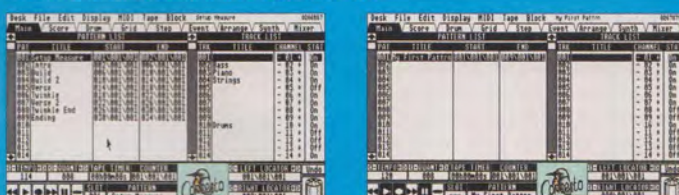
.....

..... Postcode.....

Daytime Number.....

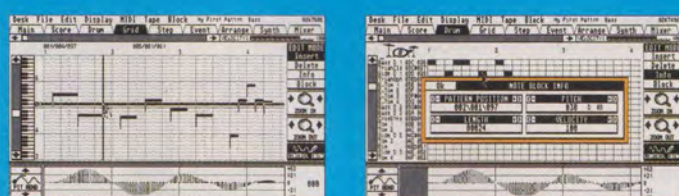
STEP BY STEP

A VERY QUICK GUIDE TO CREATING A SONG...



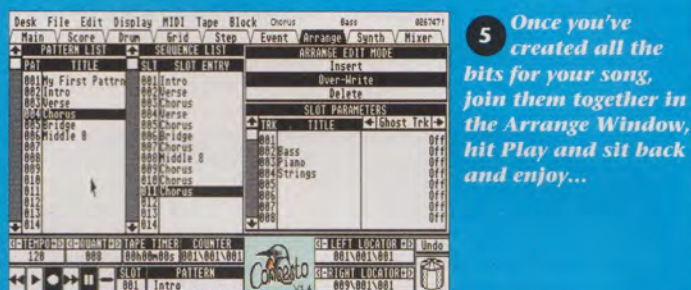
1 Set the left and right locators to the number of bars you require for the part of the song you're working on and use Create Pattern to get started.

2 Click on Play, Record and Pause, or use the keyboard equivalents of <Spacebar>, <R> and <P>. You're ready to go!



3 After recording, you will probably want to do some editing. Here, the bass track is having the pitch bend adjusted by using the Control Drawer in Grid Edit.

4 Drums have their own editor where you can create really groovy percussion tracks. Make sure you use this!



5 Once you've created all the bits for your song, join them together in the Arrange Window, hit Play and sit back and enjoy...

MORE NOISE FOR THE BOYS

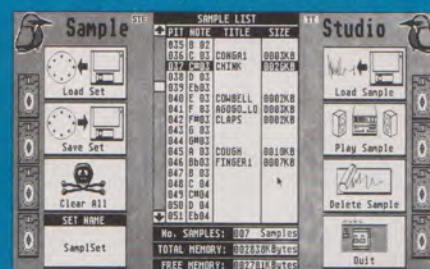
Included as a separate program, but part of the package, is Sample Studio, a program to edit sample sets for use with Concerto's Synth window. Samples in AVR and SPL format can be loaded, but are only played back at 25kHz, so you may need to re-pitch some before you use them.

Use Sample Studio to load samples into various slots or note numbers on the right of the screen. Samples can be auditioned by clicking the Play Sample button. When you are happy with the list of samples, they can be saved as a Synth Bank (*.SYN) which can be loaded

into one of the 8 Synth Banks in Concerto's Synth screen.

Although basic in use, the ability to use just a single interesting sample in a song can liven things up immensely, and transform a boring song into something quite special.

An STE or a newer Atari computer can make use of the sample play-back facility...



No less than nine programs grace the cover disk this month. Apart from Concerto, here's a rundown of the rest.

STRBAKUP

DISK BACKUP • EXCLUSIVE UTILITY BY OFIR GAL • MEDIUM/HIGH RESOLUTION

A simple backup program for your cover disk.

We use an extended format to fit so many programs on the cover disk. Back up the disk and keep the original in a safe place.

Run the program and follow the on-screen instructions. There is no need to format your backup disk as the program will do this for you.

STRBAKUP.PRGM is for backing up your cover disk. We do not recommend it for any other use.

KABOOM!

ARCADE • EXCLUSIVE GAME BY DAVE MUNSIE • LOW RESOLUTION

A reminder of days gone by...

Another great blast from the past. This time, it's *Kaboom!*, a simple, fun game originally released on the Atari 2600 game console and the 800 8-bit computer. Double click on the program file from low or medium resolution and the game will run automatically. Use your joystick to move the platform along the base of the playing area to stop the bombs getting through.



Classic arcade action.
Simply stop the bombs...

The longer you can keep them off the floor, the higher your score.

EDISK

RAMDISK UTILITY • PD BY VOLKER A. BRANDT • ANY RESOLUTION

A very flexible, reset-proof RAMdisk.

Place EDISK.PRGM in your AUTO folder and ECONF21.TOS on the same disk for a configurable RAMdisk of any size. By running the .TOS program, you can change the drive letter and size.

This program is ideal for reducing a large memory size to allow you to play some games that will not run otherwise. Full instructions included on the disk.

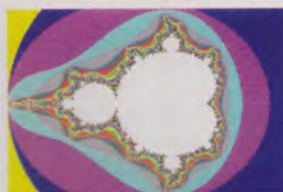
ALSO ON THIS MONTH'S COVERDISK...

FRACTGEN

FRACTAL GENERATOR

• **FREEWARE BY JON MARSHALL**
• **ANY RESOLUTION**

This Fractal generating program will run in most resolutions on any ST up to and including the Falcon. It will make use of any maths co-processors installed and any 680x0 CPU. Click



Create beautiful Mandelbrot sets with this Fractal Generator.

with the right mouse button and a menu will appear that lets you change the formula, fractal type and many other features. Full instructions included on disk.

METAVIEW

GEM FILE VIEWER • SHAREWARE BY RIC CLAYTON • ANY RESOLUTION

View your Easy Draw files without loading the program...

Most viewers will show nearly all picture formats except for .GEM files.

Metaview lets you view all of your Easy Draw creations without having to load the main program every time. Supplied in both accessory and program form, so it can be accessed from within another GEM program or as a stand-alone utility.

PRINTFILE

PRINTING ACCESSORY • PD BY CHRIS STREVEIS • ANY RESOLUTION

Print a file from the desktop with this handy utility.

Load the file PRINTFILE.ACC in the same way as any other desk accessory (by placing it in the root directory of the boot disk). By simply clicking on the Print File option under the Desk menu, you can call the file selector, select a file and send it to the printer.

THE ULTIMATE WRITE PROTECTOR

AUTO FOLDER UTILITY • PD BY STECTRE • ANY RESOLUTION

Write protect your drive with this small AUTO folder program.

Place the file T_U_WP.PRGM in the AUTO folder on your boot disk (usually drive C for a hard disk system and drive A for a floppy system).

When the desktop appears, a small bar will be blinking in the top left hand corner of the screen and you won't be able to write to any disk. To remove this feature, hold down the Control, Alternate and Help keys until the bar at the top disappears. You can now write to the drive again.

KEYSHOW

WRITE ON! ACCESSORY • COMMERCIAL • ANY RESOLUTION

Never be lost for words with this clever accessory.

A simple accessory that shows you the available character set from within Write ON! Select this from the Desk menu after placing the program in the root directory of your boot disk. Press Shift, Control or Alternate and the display will change to show you how to get to those unusual characters.

WHAT TO DO IF YOU HAVE PROBLEMS WITH YOUR COVER DISKS

DON'T PANIC!

In the unlikely event that your cover disk won't load or gives you any other problems at all, remove any cartridges and peripherals and try again. Please note that to restart the computer, you must SWITCH IT OFF for at least five to 10 seconds to clear all traces of resident programs before continuing.

If this doesn't solve your problem, return your disk, with a stamped addressed envelope to P.C. Wise Ltd., Dowlais Top Business Park, Dowlais, Merthyr Tydfil, Mid Glamorgan, CF48 2YY.

PC Wise will test the disk and send a replacement as soon as possible. You can contact the PC Wise Helpline with any urgent problems. Please note that they will deal with faulty disks only and not general enquiries. PC Wise can be contacted by telephone on 0685 350505 between 10.30 and 12.30 on weekdays.

PRESS FOR

From Bloggs & Co
to Fleet Street, the
ST can deliver full
page colour.

Nial Grimes dons
the beret and gives
you the lowdown
on the colour
capabilities of
three classics...



PAGESTREAM 2

If you are thinking of getting involved in colour publishing, PageStream 2 is likely to be your first port of call. This is no doubt down to the price – it's under a third of the cost of either of its competitors – but a wonderfully easy-to-use interface also makes it ideal for beginners.

Going by the specification sheet alone, version 2 packs all the right credentials. Four colour or mechanical separation, high quality Compugraphic fonts and support for the industry standard PostScript are just some of the delights you can look forward to experiencing, and unlike the other two packages on test, a hard disk isn't really essential.

Sixteen colour Falcon (or graphics card) screen resolutions are supported, but unlike Calamus, no dithering is used. Instead, you set up a colour palette and PageStream will match the shade as closely as possible from the selection. This makes even rough colour matching by eye a no-no – navy can appear as a shade of aquamarine, peach as bright orange and so on – but at least it gives you a rough idea of what you are going to get. The dithering problem extends to mono screen modes where you can more or less forget using colour altogether because all shades appear as either black or white!

The colour set-up is very similar to SL, consisting of libraries of shades. Two are supplied as standard and more can be easily added as and when you need them, although given the display limitations, it's probably better to use a matching chart. Once again mixing can be to RGB, CMYK or HSV standards and to its credit at this stage you get a more accurate idea of the actual colour you are creating. Mind you, let's face it – the ST's 512 colour palette can't really do any justice to the many millions of shades printable with the CMYK process.

Printer support is spectacular and included are plenty of drivers for colour inkjets which is handy for proofing purposes – suffice to say that if it isn't here, it isn't made! The excellence also extends to the import drivers which handle some 23 graphics formats altogether, including Arabesque, Illustrator, and Encapsulated PostScript. And what's more they work impeccably, if a little slowly.

Which leads us nicely on to PageStream's main problem – speed. Later versions (2.1 onwards) are quite nippy in displaying text, but the graphics handling really is painful even on an 030 machine. Some screen redraws are also illogical, which means waiting for two updates when one would be sufficient – annoying to say the least. However to be fair, by laying out your page in the right order and positioning the body text and graphics last, the screen redraws are just about bearable.

STEP BY STEP



TWIST AND SHOUT!

PageStream 2 is going to help us put together a magazine review of itself in a modern style.



1 First we begin by rotating three coloured rectangles and dropping a 'Garamond Italic' banner-headline into place.



2 The text lands on the page now, the position being easily decided with the help of PageStream's 'columns' facility.



3 Finally the by-line appears and all text is flowed along an invisible box to appear flush.



4 A screen grab is situated and a caption laid in to get rid of that nasty blank triangle.



5 A few minor adjustments later the resulting design can be output as a PostScript file and imageset at most print bureaux.

ACTION

CALAMUS SL

Calamus SL was probably the most eagerly awaited piece of software ever to hit the ST, and little wonder when you consider what it has to offer – full colour publishing on any ST, an unrivalled what-you-see-is-what-you-get display and a feature list that stops any Mac DTP package dead in its tracks.

The real beauty of *SL* is its expandability. The standard 'modules' supplied include everything you need to deal with colour, but plenty more are available to pep up its performance in certain areas.

The *Dataformer* adds PostScript support, *Mask* adds some stunning effects, the *Mount Module* is a godsend for the collation of books and magazines, and the list goes on and on.

But what does the big C have to offer the colour publisher? Well, full separation is naturally on the menu, and extensive dithering is used to produce a screen display that knocks *PageStream 2* and *Didot* into the ground on colour systems. Colour handling is through the use of 'lists'. A standard dialogue – and what a dialogue! – allows mixing by CMYK, CMY, RGB and HSV standards and the resulting lists can be saved to disk for future use. If you have a colour matching module loaded, such as Pantone or HKS, clicking the 'System Colours'

button will let you choose shades from these standards. Raster graphics are one area where *Calamus* falls behind its main competitor, *Didot*. There are plenty of import drivers, but adjustment is limited to a simple 'control line'. This may be sufficient for screen shots and the like, but if you intend to use a lot of scanned images, you'll probably need to invest in *Retouche CD* or *Cranach*. One neat trick it does offer though is the ability to overlay – that is, reverse – the colours of any object as it is laid over another.

In terms of printer support, *Calamus* will not be beaten – dozens are bundled as standard, both colour and mono, and in the unlikely event of your model not being covered, you can always design one with the 'Driver Generator'. The manual covers this process in some detail and, incidentally, does a better job of explaining the colour printing process in general than either *PageStream's* or *Didot's*.

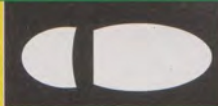
Of course there is a penalty to pay for this power, and in *Calamus'* case it's the system you need to exploit it. All pictures and text are stored in memory, so four megabytes of RAM and a fast hard disk are utterly essential and if you intend to use scanned colour images, you can reckon on far more. In its favour, it does offer virtual memory, so in terms of RAM you are only limited by hard disk size.

DON'T DILLY-DALLY – DITHER!

In order to display colour on a mono system, a process called 'dithering' is used. This transforms real colours into shades of grey you can see on screen. A simple example is the high resolution Atari desktop which appears to be grey, but is really alternating black and white dots.

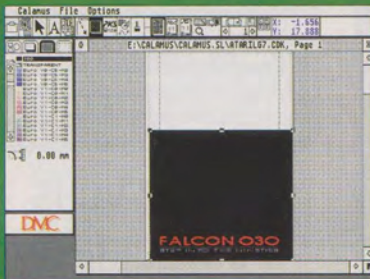
This technique can also be used on colour systems to give the illusion of more shades than can really be displayed. Common methods of dithering include 'ordered' which uses a different pattern for each colour, 'halftone' which varies the size of the dots, and 'Floyd-Steinberg' which uses a complex mathematical formula to match adjacent patterns with superb results.

STEP BY STEP

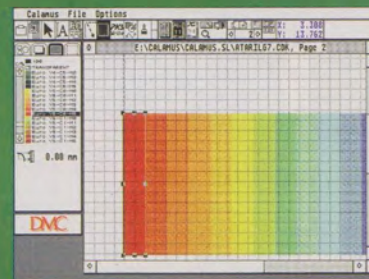


THE DREAM MACHINE

To put *Calamus* through its paces we're going to design a colour advert for our friends at Atari.



1 First we put together a suitably atmospheric logo – the focus of our campaign – and lay a classy black tint across the whole page.



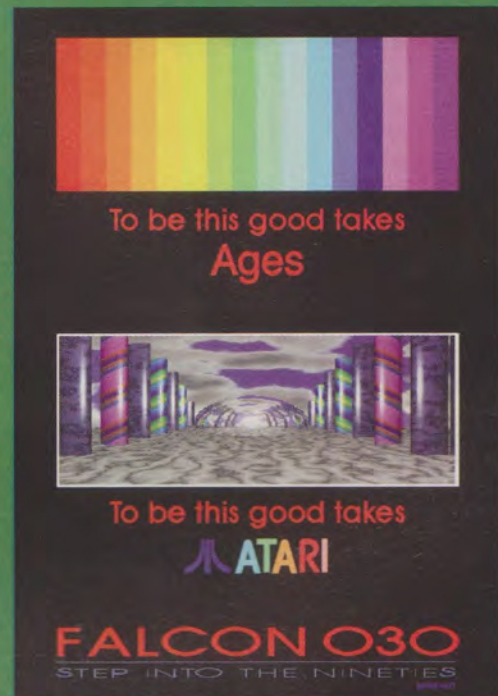
2 A colour rainbow is now designed with the help of a grid, and shades picked from the Euro-CMYK colour list.



3 The other half of the advert consists of a true-colour TIFF, which we now import.



4 Next, an 'Atari' font is loaded up and the colours adjusted to suit the Falcon 030 scheme. Finally we lay in the main text.



5 The resulting page is output through the *Calamus Dataformer* as a 24-bit TIFF file and imported directly into the page you are now reading!

DIDOT PROFESSIONAL CD

Let's get one thing straight – *Didot* is unlike any other desktop publisher you will ever use. It's as if the designers binned the rule book, and the result is a package that excels in many areas not touched by traditional packages, but which falls short in some key areas.

The interface draws inspiration from *SL* – which is natural considering *Didot* started life as a *Calamus* font editor – and many operations even share the same icons. But here the similarities end. Unlike *Calamus* or *PageStream*, the document in memory is not displayed in a window – you use three icons to navigate around the page instead. One takes you to a full view, another allows you to define your own zoom level and the third toggles between the two views. You soon get used to it, and the bitter pill of flexibility is made significantly sweeter by the speed at which everything is redrawn – this program is fast! And the speed extends right the way through the package, from viewing fonts to editing the projection grid which is so fluid you can almost touch it.

From a colour angle, *Didot* is limited by its display. In order to keep the speed up to scratch, the package is hard wired for a mono, dithered screen. A range of desk accessories are included for previewing a page with the help of

a display card, but very few of these beasts ever make it out of Germany. On the bright side, a Falcon version is in the late stages of development.

As far as effects are concerned, you would have to go a long way to beat *Didot*. Particularly good are the colour gradient fills which are child's play to create and look absolutely stunning. Projection of vector objects onto user-defined 3D paths is also included as standard – both are feats which *Calamus* is unable to achieve without some help from *Outline Art*. Colour creation is limited to CMYK mixing, but once made, the shades are automatically saved with your set-up for future use.

Another aspect in *Didot's* favour is *Retouche Professional CD*, which is now bundled as standard. This puts *Didot* in an unrivalled position for dealing with scanned images and includes effects never seen outside the exclusive world of Adobe Photoshop on the Mac. And what's more, object linking is in the pipeline, which means you won't have to load *Retouche* at all – just import the picture as usual and *Didot* will request a memory-friendly thumbnail sketch. When the document is printed, the full image will be restored in all its glory! It ought to be mentioned that while *Didot* is happy to run on any reasonably well endowed ST, *Retouche CD* is a different matter altogether. Suffice to say the manual suggests a TT with 8 meg of RAM – yikes!

EXPAND YOUR HORIZONS

ST owners catching a glance of the Falcon-produced step-by-steps are probably seething with jealousy at this point, but you needn't. With the right software it's possible to get a similar display on any STE, and what's more the software you need is public domain! By installing the MonSTER virtual screen driver (Floppyshop disk no. UTL308) in low resolution, you will find yourself with a 640x480 screen in 16 colours – TT medium resolution!

Of course, rather a lot of scrolling is involved to get anything done, but to add a touch of colour to a *PageStream* document it's ideal and is far cheaper than a graphics card or a Falcon.

GRAPHICS GRUMBLES

Graphics files are the bane of any layout artist's life, and while your DTP program may claim to import lots of formats, it's unlikely to deal with every single variation – there are at least a dozen flavours of the TIFF format alone!

The solution? Use a program designed to treat all your pictures before presenting them to your desktop publisher. This makes the files easier to import because they are all in an identical format.

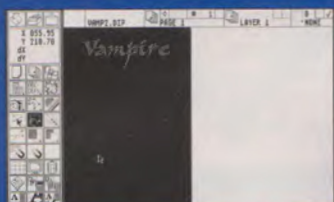
The best conversion utility for the ST is *GEMView 2.24* (see *In At The Cheap End* on page 81) – available from most good PD libraries – which handles almost any format and happily writes files in TIFF, X-IMG, GIF, Targa and IFF formats.

PARLEZ-VOUS POSTSCRIPT?

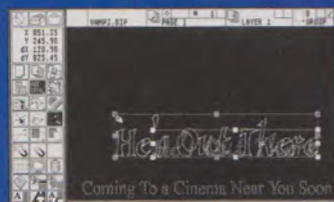
PostScript is a typesetting language that was developed by a company called Adobe in the early eighties. Through its inclusion in the Macintosh system software it has gained acceptance as a world standard and you will find that most professional print bureaux deal exclusively with PostScript files.

Didot, *PageStream 2* and *Calamus SL* (through the *Dataformer*) can all output PostScript files to disk which can theoretically be taken to any print bureau and imageset. However, as with all programming languages there can be compatibility problems. Generally, the larger the bureau the better chance you have of succeeding and once you've found a company that can handle your files, it should be plain sailing.

STEP BY STEP



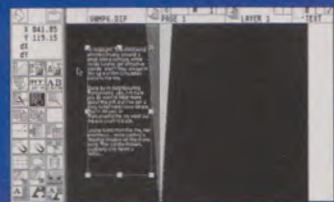
1 First, a black vector object from the library is drawn across the whole page and a red 'graphic text' headline laid in.



2 Next, the text at the bottom of the page is created with the text editor, coloured to match the logo and stretched to a suitable size.



3 A dagger clip is now imported and positioned (although it could just as easily be designed with *Didot's* vector drawing tools).



4 Finally, the promotional text is laid into place, flowed to follow the shape of the dagger, and a drop-cap whacked into place.

MAKIN' MOVIES

Didot Professional's superb free-form design features are going to help in the production of a spine-chilling film poster.



5 The finished article can be printed as PostScript or dumped to disk as a colour separated TIFF file.

VERDICT

In some ways it's hard to compare three such radically different packages, because each has its own strengths and weaknesses. *PageStream 2* is a nice package, although as a desktop publisher you can't mention it in the same breath as *Calamus SL*. In many respects it belies its low price and remains a damn good introduction to colour publishing, but when it comes to DTP you get what you pay for.

Calamus SL is a jack of all trades, and providing you've got a machine to exploit it, it's good at every one of them. From free-form adverts to

more regimented designs such as articles and books, it's all the colour desktop publisher you will ever need.

On an ST, it's a very close run thing between *Calamus* and *Didot*, the latter probably just having the edge thanks to its blistering speed. But put the two up against each other on a Falcon, and *SL* just sparkles. The promised page preview utility may help it out in this department, but let's face facts – there's nothing like seeing the colour on screen as you are working.

Conclusion – for free form page design alone *Didot* is hard to beat, but as an all round colour desktop publishing system *SL* has a definite edge.

System Solutions

High Res Monitors

The sudden lack of Atari High Resolution monitors, and high demand, have prompted System Solutions to fill the gap with their new range of SM14 monitors.

This 14" monitor has a paperwhite FST (flatter squarer tube) which gives a crisp and sharp image with no blurring at the edges. There are two models: the SM14 without speaker, and the SM14s with Speaker. A special Falcon version is available.

The Monitor has only 1/2" border, which gives the biggest picture on any 14" monitor, perfectly centered. It has dynamic focussing, and a tilt and swivel base. It is a totally plug-in-and-go unit.

"Essential Buy, 90%"

ST Review, May 1993

SM14 £149.95

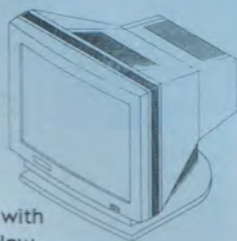
without audio

SM14s £169.95

with audio

Special Price

when bought with
OverScan ST. See Below



New
Version
Falcon
compatible

NVDI

If you are one of those people who use DeskTop Publishers or Music Notation, do you find that you spend ages for the screen to redraw? NVDI is the fastest and most compatible software display accelerator available.

It works by replacing parts of TOS with optimised code. The faster the processor (CPU), the greater the benefit. Display routines are 3-10 times faster.

The New Version 2.5x is even faster, and is Falcon compatible.

Version 2.5x - £49.95

New Price

High Density

Double your Floppy Disk space to 1.44Mb on one floppy, with the Elco High Density kit.

- ★ Support for up to three drives!
- ★ Hardware and software sensing!
- ★ Software is included. (ACC and CPX)
- ★ Supported by TOS 2.06
- ★ New 1.44Mb Floppy drive
- ★ PC and Emulator compatibility
- ★ The first and still the best!

A perfect replacement for those single and double sided drives.

Special Offer Price: £79.95

High Density Module w/o. drive £39.95

Hard Drives

QUALITY SCSI Hard Drives from 40 Megabytes to 2 Gigabytes!! They are all carefully assembled into beautiful UK made cases, and available from as low as £299



Special Offer:

120mb SCSI Drive
complete with ICD Link
£449.00 inc.

Falcon Hard Drives,

Ideal for hard-disk recording,
1000Mb, 10ms, 5 yr warranty. - £1099.00
120Mb plug-in-and-go - £369.00
A large range of capacities available.

News

Coming Soon...

30Mhz Falcon Accelerator for less
than £300. Ask for details.

By the time you read this advert the Falcon "Screenblaster", which enlarges the display to 1100x760 pixels, should be available from stock. Come and see it in action at our London Showroom.

Price only £79.95

BlackWater BBS

Our new BBS is now up and running. Features include: a helpline, Special Offers, Press Releases, Product Information, file and message base.

* 14,400, MNP5, 8N1*

Give it a call on 081-299 3933

For further information on
any of the products on this page,
please contact System Solutions:

Mail Order: Windsor Business Centre,
Vansittart Road, Windsor, SL4 1SE
Tel: 0753-832212
Fax: 0753-830344

Showroom: The Desktop Centre
17-19 Blackwater Street,
London, SE22 8RS
Tel: 081-693 3355
Fax: 081-693 6936

Crossing the Border

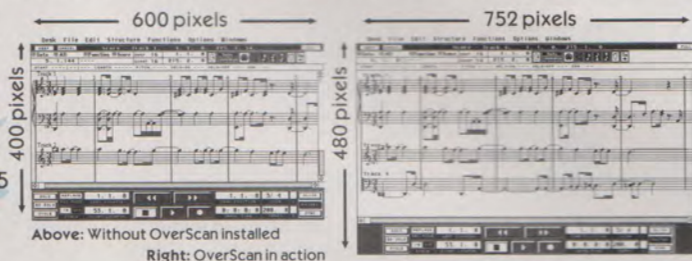
EVER fancied the idea of a larger monitor, but not the price that goes with it?? Well now you can, with OverScan ST. This little board fits inside your Atari ST(FM) or Mega ST (not STe's) allowing you to use the black borders as an extended working area. In practice this means that you will get up to 40% extra screen in high resolution, and up to 60% in colour.

**Special Offer
Price £39.95**

Save £30

SM14 Monitor and
OverScan - £169.95

SM14, + OverScan
Fitted - £199.95



Summer Madness for August + September

Free fitting on all upgrades supplied with computers that are sent in for repair. Ask for the Upgrade Offer Price List. It covers Memory Upgrades, Floppy Drives, High Density Floppy Drives, TOS 2.06 Operating Systems, PC Emulators, Accelerators, Key Clicks, OverScan ST and more. ONLY £10 for courier collection and delivery (UK Mainland only). **Phone now for your personal quote.**

Windsor Service Centre:

Windsor Business Centre, Vansittart Estate, Windsor, SL4 1SE. **Tel:** 0753-818816

London Service Centre:

The Desktop Centre, 17-19 Blackwater Street, East Dulwich, SE22 8RS. **Tel:** 081-693 1919

ATARI
WORKSHOP

SILVER SNAPS

Maurice Collins takes a closer look at another aspect of CD-ROM technology, PhotoCD on the ST and Falcon.



When PhotoCD was launched late last year with a fanfare of trumpets, you might have been forgiven for looking puzzled. Why on earth would anyone want to look at family snapshots on the TV? Don't we already have square eyes as it is? My first reaction was probably much the same as yours – why bother? PhotoCD appears to be the perfect example of "technology push" in marketing – a new super-duper whizz bang gizzmo comes along and all of a sudden we're told it's what we've all been waiting for...

Well, since writing last month's general article on CD-ROM, PhotoCD and I have become better acquainted. It's not exactly a steamy love affair, for reasons that will become obvious, but we're getting on quite well.

If you missed last month's CD adventures, let me remind you that PhotoCD is Kodak's latest invention. No longer do we have to take our roll of 35 mm film into Boots and get a handful of shiny prints back. Now we

can all get a CD disc instead, on which our lovingly snapped moments are stored as digitised images. The cost isn't too bad – Boots, who offer the service in larger towns and cities, charge £12.99 for converting a roll of 24 exposures onto CD and that includes the disc. Existing negatives can be added for 60p each. My local branch quote 14 days to turn the job around though city dwellers should be able to find faster means.

OK, it's two or three times more expensive than the traditional method but there are some advantages. CDs are a lot harder than paper prints – they don't get crumpled or lost quite so easily. If they get covered in marmalade or whatever, you can probably wipe it off – try it with a photo and all you get is a soggy mess.

The main advantage for computer users – frankly I still can't see any reason to bother with one of the "under-TV" consoles but that's just my opinion – is that you avoid the need for scanning your images to get

One of Kodak's PhotoCD players.



them onto the screen with a much higher quality and resolution than even a 24-bit scanner can manage.

You can also have a lot of fun with those boring old holiday snaps. I can't honestly say that I've ever wanted to look at Auntie Mabel sideways on or upside down, as the PhotoCD console players let you do, but there is a certain vicarious thrill in zooming in on the hairs on her chin – or the bikini clad bather who just happened to get into so many of those holiday snaps...

SOFTWARE

PhotoCD is simply an extension of standard CD-ROM technology which, in turn, works in much the same way as a hard drive. To use a hard drive you need a driver which is invariably

supplied with the drive itself. This is a small program that tells the ST about the extra hardware and how it is to be used. Atari have already put together driver software for CD-ROM drives called Atari *Metados*.

The *Metados* drivers, supplied with ICD's The Link host adapter, are installed in the AUTO folder of the ST's boot disk and after a little bit of experimenting with SCSI IDs and some editing of the configuration file, the drive starts up and the PCD files appear in the relevant window. Note that the *Metados* drivers don't work on the Falcon, though, so images have to be copied from an ST in order to view them at present. Working Falcon drivers will no doubt appear before very long.

Getting the CD-ROM up and running is the easy bit. The hard part at



Using image processing software like Studio Photo you'll be able to import, view and manipulate PhotoCD images.

Using TruePaint you can zoom in on images to show a remarkable level of detail. This one is a close up of the bottom right-hand corner of the mountain stream image!





A Kodak PhotoCD – over 100 full colour, high resolution images can be stored on a single disc.

the moment is finding an application that understands the PCD files! You can copy them onto your hard drive to your heart's content but there aren't any ST or Falcon applications available yet that will actually let you view them.

Compo were good enough to supply a test version of an ST/Falcon image processing package called *Studio Photo* which should be available later this year. I had no difficulty in reading the images although on a 4 MB machine I could only load them in wallet, snapshot and standard sizes. HiSoft are working on an EFMS driver module for their *TruePaint* and *TrueImage* programs that will also allow PCD import.

Once you see the images on a Falcon, though, it all becomes worthwhile. In true colour mode you can zoom in on the near-photographic quality images to show the remarkable amount of detail that's present. Even ST owners can use utilities like *Photochrome* to view them with surprising effectiveness. With the right software you'll be able to cut, paste and convert images for use with other packages and even incorporate them into desktop published documents. It might not be here yet, but it's not far away!

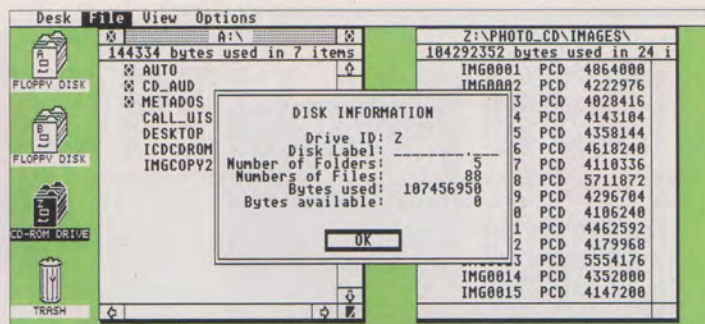
PLAYING TO THE CROWD

To start using PhotoCD, you'll need a CD-ROM drive. There are so many standards around in the CD-ROM world – some might say double standards – that choosing the right drive can be a bit awkward. Whether you're using an ST or a Falcon, you'll need a SCSI compatible drive but aside from that there are all sorts of "extras".

It makes sense to go for drives advertised as PhotoCD-compatible but not all drives can read PhotoCDs, including some of the Hitachi range. With a multi-session drive, you can

add images onto your original CD, and with double-speed (and more or less double price) drives you can read them faster. The CD-ROM XA, a supposedly ground-breaking standard short for extended architecture allows sound and graphics to be played back simultaneously but it is equally possible to do the same thing in the access software. It currently means little to ST or Falcon owners and may never do so.

To complement the computer technology, Kodak have launched a range of console PhotoCD players. They are about the same size as video cassette recorders and allow you to view PhotoCD pictures in any order on a standard TV. You can also enlarge parts of the image or rotate



Just look at all those files! Drive A, the boot drive, contains the Atari Metados drivers while drive Z, the ISO9660 drive, shows some 100 MB of software - and it's only a quarter full!

them in 90 degree increments and even recall favourite pictures by number.

Kodak has even launched the PCD970, a portable PhotoCD player that doubles as a portable CD Audio player too. Again all it needs is a TV but it incorporates continuous sound capability for the next generation PhotoCD disks that will be able to display images and soundtracks.

Prices of dedicated players start at just over £100, much the same as CD Audio players. This is in strong contrast to the cost of a drive intended for computer use (the Cumana drive reviewed last month sells for over £600). The reason is that computer compatible drives need to be far more accurate – music or images are unlikely to be affected by a single read error but software would certainly crash.

ON THE DISC

All images, up to 100 on a standard disc, are stored as *.PCD files, from IMG0001.PCD upwards. The actual

image files are between 3.5 and 6 megabytes in size but they can be opened up into one of five resolutions. The smallest is wallet sized (128 by 192 pixels), then comes snapshot (256 by 384), standard (512 by 768), large (1024 by 1536) and poster (2048 by 3072). As they're all 24-bit colour, they tend to be quite sizeable. Large sized files take up about 4800 kilobytes while the snapshot size takes up about 6% of this.

Just to confuse the issue further, there are a number of PhotoCD disc formats though that shouldn't cause any difficulty. The Master format is the one you and I will get from Boots and other film finishers. The Portfolio format is aimed at publishers who can produce discs containing combinations of images, stereo audio, graphics and text such as multimedia-type presentations for education and training. Other formats include the Professional format, which stores the larger, full resolution images used by photographers, and the Catalogue format designed for storing large numbers of images at video resolution.



A mountain stream in Colorado photographed by Norman Kerr

EXCLUSIVE!



ST ACTION BRINGS YOU CLEAR, CONCISE ST GAME REVIEWS...WELL BEFORE THE REST OF THE PACK!

Reviewed this issue: Ishar 2, Stone Age, War in the Gulf, Reach for the Skies, Creatures. Oh! Did we mention the 4 page exclusive Zool preview?

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DISK OF THE MONTH

BRD 16 COURSE FISHERMAN. Superb treat for any angler. Needs 1 Mb to run. 12 different venues. Whole host of variations in tackle. A great way to while away the hours when you can't get to the bank.

ARC 20 BLAT. Superb STE ONLY falling blocks game. 10 fun filled levels. Superb DMA sound, will work with 512k but is a real treat on 1Mb machine. Great graphics.

ART 07 Superb art package, ideal for simple DTP. 23 built in fonts. A4 size paper works in monochrome for best quality of print. Ideal for leaflets etc. DS Disk.

ADV 01 DDST. DUNGEONS & DRAGONS. Role playing adventure. PARANOIA. ENCHANTED REALM and ELBOZO CITY. 3 more good adventures also on this disk.

BRD 04 CHESS. superb chess game. DECODER, excellent mastermind. SUPER SIMON, computer version of hand held game. DOMINOES, puzzle game. GOLF card game. Also on this disk DRAGON MAZE, 2 game, SENSORI BACKGAMMON, BRIDGIT, ST ARTREK, BATTLESHIPS.

ARC 14 HOME, and L'ORB 2 super pinball games. GALTIC RANGER, unusual shoot em up. MONKIES & BALLOONS, bounce the clown and burst the balloons. FIRESTORM, another good arcade game rescue the humans. LAZERBAL, super game and interesting version on the pinball theme. Also on this disk LOST TREASURE, WIDOW MAKER, SLALOM & BREAK OUT.

AST 01 PLANETARIUM simply the best PD Astronomy program. SKYMAP another great Astronomy program plus aSTronomer.

BRD01 MONOPOLY, LAZER-CHESS, OTHELLO, CHECKERS, WHEEL OF FORTUNE and more. A superb collection of BOARD GAMES.

WPR01 ST WRITER V4.2 and FIRSTWORD. The best word processors for the STE plus a spell checker, print spooler and a selection of ready to use letters.

ODD07 THE WORLD OF STARTREK. Over 300K of text interviews and biographies from the original STARTREK and NEXT GENERATION plus loads of pictures from both series. A must for all TREKKIES!!!

ARC04 TETRIS, superb Tetris game. KLAX TRIX, WELTRIS & TETSID. 3 more good games on the Tetris theme. MR DICE, COLLAPSE & BURGER, 3 more good games to fill this super value disk.

WPR02 IDEALIST. Super multi column text printer. EX COLUMN, DUAL COLUMN, 2 COLUMN. 3 more good multi column text printers. DOUBLE PAGE. Print 2 pages at once on A4 on your SLM 804.

WPR03 ALICE. Super text editor up to 10 docs. In memory at once. EDITEXT. Super little text editor. Ideal for beginners. NEWORD 400v3. Easy to use text editor, again good for beginners. NOTEPAD. Make temporary notes from within any gem program. PHONEPAD. Pop up telephone book. FILOFAX and ORGANISER. Everything a paper filofax would have and much more in these two programs. TYPEWRITE - Turn your ST into a typewriter.

WPR09 LEXICON. A pure word list containing 46,209 words without slang, americanisms or other rubbish. Needs 1Mb to run with SPELLONE (spellchecker) also provided on this disk.

BRD05 AMERICAN FOOTBALL. DALEKS. STARTREK. DELTA 3. CELESTIAL CEASERS (versions 1 and 2). SPACE WARS. RED ALERT. MATCH. HANOI. OGRE. 11 Board and Strategy Games. SPLENDID SELECTION!!

ARC12 BELUM INTERACTUM - Good galaxians clone. BLOCKADE. HAUNTED HOUSE. AMORTRACK. BOING.

INVADERS. MANIA. Another superb selection of arcade games.

ADV03 CONQUEST. Graphic adventure. Should take weeks to complete! (Shareware).

ADV06 BLACKDAWN. Good text adventure with excellent graphics. DUNGEON MASTER NEW LEVELS. Needs original DM disk to play.

UTL134 SAGROTAN. Must be the best virus killer around. V.KILLER v3.84. Another excellent virus killer. EXORCIST. The latest version of this V.Killer. HD RESTORE. Repairs hard drive boot sector. RIPPER and PROBE. Two programs to grab music and graphics from disks and more...

UTL120 ZX SPECTRUM EMULATOR. Needs 1Mb SPECTRUM to ST DOWNLOADER. Gives details on how to transfer Spectrum games from tape to disk for the above emulator. ZX81 EMULATOR and 89 PROGRAMS.

ARC15 CYBERTECHNICS Fast & furious arcade game. CRAZY ERBERT fast Q'bert clone. SLUG to fill the disk.

BRD09 MILE Excellent board game. D FISSION. Super Othello type game. TUNNEL VISION Excellent maze game. 3 jigsaw puzzle games. ST TIC TAC TOE. HIGH-LOW. BLACKJACK and more on this disk.

BRD12 TOWER POWER Super strategy game runs on 512K, 1Mb and 2Mb machine. Optional data disk available as BRD13.

ARC37 LLAMATRON and REVENGE OF THE MUTANT CAMELS. 2 superb games from Jeff Minter. These are a must for any game collection

We also have a selection of 46 commercial games at under £3.00 each

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OPEN HOUSE

How do we get hold of review material?



Reviewing products that you may (or may not) want to buy make up a very important part of the magazine.

Before I joined *ST Review*, I had no other reference points to help me decide

where to spend my hard-earned cash. There is nothing more annoying than buying a new disk and finding that the contents are not what you expected; for this reason, it is important that magazines carry the right information at the right time.

Sometimes, the products reviewed are not worth the space given to them in the pages of your favourite monthly mag. But such reviews are just as important, as they tell you what NOT to waste your money on.

Other mags may shun a poor product and give the page to something else, letting you find out if you have made the right decision the hard way...

Now the boot is on the other foot and I have to help decide what goes into the magazine. Vic Lennard, as editor, has the ultimate say as to what goes in and what is missed out, but the process is usually a democratic one. However, it is nice to get hold of a new product that is going to change the way I work on my ST and spread the word to anyone who will listen.

When I discovered the joys of TOS 2.06 and had it installed into my ageing 2.5 megabyte STFM (TOS 1.0), I wondered how I had ever managed without it. But in terms of software, it was XBoot that had the most dramatic effect on the way I work.

What makes life difficult is when companies don't send details of products or review copies to us. When this is the case, we can't even try them and decide whether you should be supporting them. It is usually these companies that complain that the ST market is dying or that "my products never seem to get coverage".

Because of the job we do, manufacturers and distributors have to come to us with their products. We don't have the advantage of knowing that something is available by reading it in another magazine! What is even worse is reading a review in a rival magazine of something we haven't even seen!

So, an open message to anyone who has a new product or software title to offer the ST or Falcon marketplace: Tell us about it. Let us have a review copy or sample product.

At the end of the day, the best advertising is a good review in the right magazine - something that money just can't buy with ST Review...

Be seeing you...

Tony Kaye has owned an Atari computer since 1981, starting with an original 8-bit 800 machine. Looking at his picture above, you can see why we usually only show his hands! Currently, Tony is having a deep discussion with Dave Munsie over who supports the best American Football team...

Andrew Wright
looks at Migraph
OCR Senior, a
package that
offers text
recognition
on the ST!

LIGHT READING

Optical character recognition, or OCR as it is more commonly called, is a way of teaching computers to read. You'd think that any old computer would be able to do something that comes so naturally to us mere humans but nothing could be further from the truth. Of course, we can scan a page of plain text and look at the characters on the screen but the computer doesn't actually understand them as text – it sees them purely as bitmap images.

Wouldn't it be more useful to be

able to convert the characters from bitmaps to ASCII text? We could then load the scanned words into a word processor or text editor and do what we like with them. It might sound the last thing some of you would want to do but others will see the possibilities immediately. Perhaps you edit a newsletter and regularly receive contributions produced on a typewriter that need to be keyed in again. Or perhaps you have a substantial amount of your own previously written material you need to incorporate into a book. I don't suppose you fancy typing all that lot in again, do you?

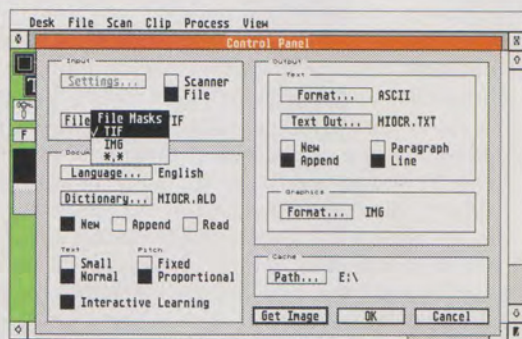
Migraph OCR Senior is designed to work in conjunction with hand or flatbed scanners to scan text in bitmap form and then convert it into editable ASCII text files. It comes on three disks containing English, German, French and Dutch dictionaries and works in colour or monochrome on an ST, TT or Falcon. At least two megabytes of RAM are required, though, as the program

itself is larger than half a meg and the dictionaries have to be loaded too. With a full A4 page of text and line art at 300 dots per inch taking around 300 kilobytes or so in compressed IMG format and over one megabyte as a TIFF file, space will be pretty tight even on a two megabyte machine. You'll need a hard disk too as the program uses it as virtual memory.

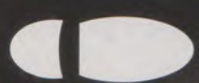
The program uses a custom installation routine and takes about two megabytes of hard drive space, depending which dictionaries you install. It has a neat GEM interface in the same style as other Migraph products, with an icon toolbox on the left duplicating commands available from the dropdown menus. The manual is reasonably comprehensive and runs to 56 pages.

Files can be loaded in TIFF or IMG format or scanned directly into the program using a hand scanner. The manual gives no clue as to which hand scanners are supported but as most Migraph products are designed

A comprehensive control panel helps you keep things just the way you want them.

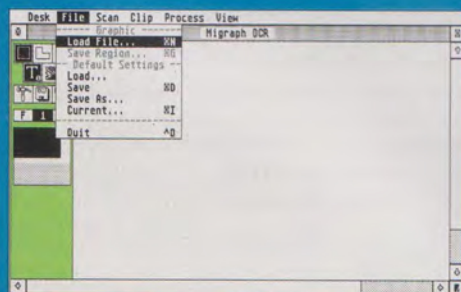


STEP BY STEP

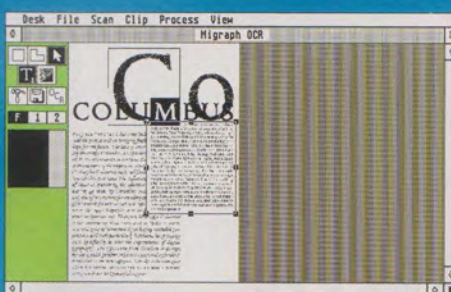


OCR IN ACTION

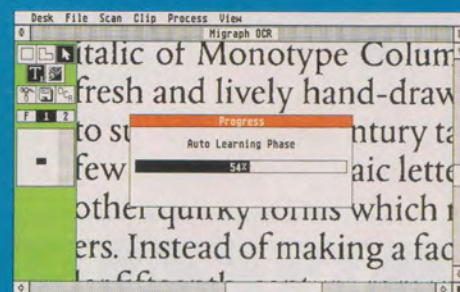
To demonstrate Migraph OCR in action, we'll try out a typeface called Columbus. This is a brand new face based loosely on 16th century Spanish print.



- 1 First the scanned 300 dpi image is loaded into the program.



- 2 The next step is to define a region of text for recognition. Although the program defaults to reading the whole page, multi-column documents need to be split into two or more text zones. You can also specify the order in which they're to be read which is useful for magazines and newsletters with more imaginative layouts.



- 3 The program then goes through several intelligent processes in which it compares what it sees with the characters in the built-in and user dictionaries.

to use the Golden Image, Migraph and Genius varieties, one of these should be a safe bet. Disappointingly, the program didn't seem to work with the Naksha or Handy scanners available for the review.

Once you've loaded a bitmap, it appears in the main window at one of three magnifications – full page, actual size or 200%. Moving around the image is easy, using either the GEM scroll bars or the black rectangle on the toolbox's virtual screen but there's a big gap between full page and 100% – a full A4 page of 300 dpi text is illegible in full page mode but at 100% you can't see more than a few words and this can prevent you from accurately positioning the boxes that tell the program how to read the text.

The program recognises 21 type styles including Times, Helvetica, Courier, Courier Italic, Bookman, Letter Gothic, Prestige and Pica. Many of the others are a little more obscure and probably relate to specific printers as I couldn't find them all in standard typeface catalogues. The recommended point sizes are from 10 to 18 points though smaller sizes are possible at 400 dpi or above.

OCR Senior can be trained to recognise new typefaces and understands the US and European character sets as well as proportional and monospaced type. Although it is claimed to be usable with various qualities from typeset text to dot matrix output, the lower the print quality and scan resolution, the more errors appear and the more user interaction is required. Italics present some problems and tightly tracked or kerned characters mean a lot of effort will be required on every single page.

There does come a point with this type of text where all the training in

HOW OCR WORKS...

INSIDE INFO

OCR has come a long way in a short time, especially in business where it is linked to flatbed scanners that can automatically feed documents in one after the other. Quite a few major companies, for example, routinely scan and read incoming correspondence such as letters and returned forms.

The first OCR applications used to compare the scanned image with a database of bitmapped characters but obviously ran into problems if the scanned character wasn't exactly the same as one in the database.

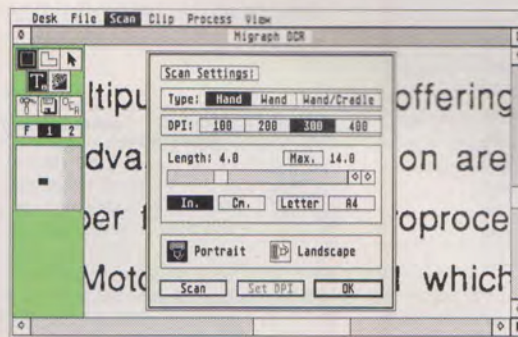
Trainable OCR was the next step. Whenever a character appeared that it couldn't recognise, it would prompt the user for a match. This character would then be added to the database and recognised whenever it appeared again. Such a process is slow, though, and it takes time to build up an accurate database.

Omnifont technology was the real breakthrough. It uses mathematical definitions to identify the character, rather than bitmapped images, and this improves both speed and accuracy as well as removing the need for a large database of stored characters. In addition, programs like OCR Senior use lexicons or dictionaries in order to guess more intelligently what a given problem letter might be.

Using mathematical definitions also means that new typefaces can often be recognised without much additional input. OCR Senior, for example, is trained to read the Bookman and Times proportional serif typefaces. As a result, it can do a reasonable job with many similar faces like Century, Palatino and Garamond.

the world doesn't seem to help and the error rate becomes unacceptably high. For example, using the Epson GT6500 to scan some A4 press releases at 300 dpi, OCR Senior

managed to recognise Courier and Helvetica with an error rate approaching 0.1% among standard characters and an overall error rate of under 0.5% taking into account the



Some hand scanners are supported directly and you can see the image appear as you scan.

Fast, intuitive interface
Good range of typefaces supported

PROS AND CONS

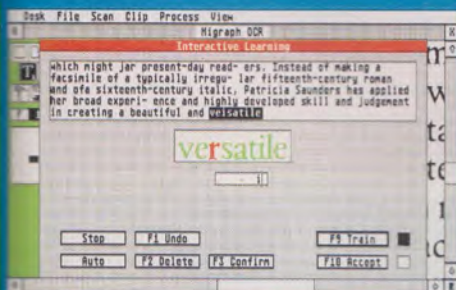
Interactive mode rather slow
Inflexible zoom

"Providing you know what to expect from OCR, Migraph's package offers ease of use and rapid recognition"

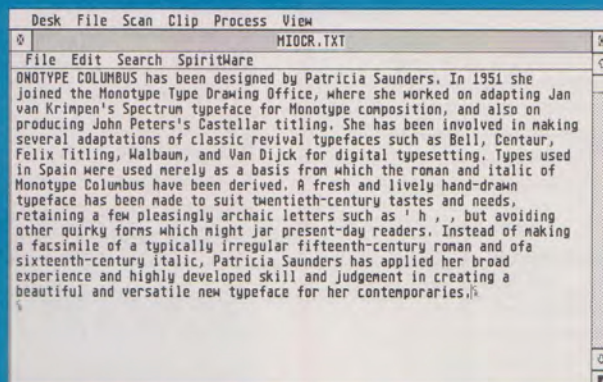
NAME: OCR SENIOR
COMPANY: COMPOSOFT
CONTACT: 0480 891819
PRICE: £49.95
MIN MEMORY: 2MB

EASE OF USE ★★★★★
DOCUMENTATION ★★★★★
EFFECTIVENESS ★★★★★
VALUE FOR MONEY ★★★★★

OVERALL **84%**



4 If you've selected interactive mode, it will then present you with the characters it couldn't recognise and ask for your input. You can store characters in your own dictionary (a separate one for each typeface is recommended) by selecting TRAIN or simply confirm them by pressing ACCEPT.



5 To see the result you have to use an external text editor which seems rather a strange omission but there are plenty of good desk accessory ones around.

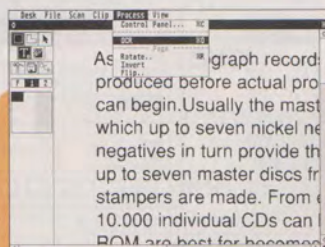
WHAT'S EXTRA IN EASY DRAW 3?

<input type="checkbox"/>	Easy Draw 2 manual	£12.99
<input type="checkbox"/>	Easy Tools 2 manual	£9.99
<input type="checkbox"/>	Easy Draw 3 upgrade	£29.99
<input type="checkbox"/>	Easy Tools 3 upgrade (Required to use Easy Tools with Easy Draw 3)	£9.99
<input type="checkbox"/>	Touch Up	£34.99
<input type="checkbox"/>	OCR Junior	£39.99
<input type="checkbox"/>	OCR Senior	£49.99
<input type="checkbox"/>	Package – Easy Draw 3, OCR Junior and Touch-Up	£79.99
<input type="checkbox"/>	Package – as above but with OCR Senior	£84.99
<input type="checkbox"/>	Draw Art	£13.99
<input type="checkbox"/>	Scan Art	£12.99
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ALCONBURY WESTON, HUNTINGDON PE17 5JA

Easy Draw 3 is the very latest version of Migraph's excellent product, covering creation and editing of Bezier curves and splines, tracing of bitmap images and conversion of any object (except for text, bit-images and polylines) into Bezier curves. With this added capability you have the power tools to produce professional results with every project.



A powerful, intelligent, full-featured text reading application. Convert scanned text to an ASCII text file which can then be loaded into a word processor or DTP program.

Pretrained on many different typefaces including Bookman, Carol Pica, Courier, Courier Italic, Delegate, Elite Modern, Helvetica, Pica, Prestige Elite and Times. If the typeface of your text is not predefined then it's easy to teach any new style to Miagraph OCR.

OCR Junior is for direct scanning using the Golden Image hand scanner. *OCR Senior* allows you to load TIFF, IMG and IFF images as well as direct scanning.

Scan Art contains a set of specially scanned, hand edited .IMG files for use in *Easy Draw 2*, or any other package that reads .IMG files.

Draw Art is a selection of professionally

drawn vector
graphics in
.GEM format ideal
for loading straight into
Easy Draw 2.



Screen accelerator programs come and go, but NVDI keeps on running. Ofir Gal runs his GEMbench utility over the latest version...

FLY LIKE THE WIND...

STs feature a user-friendly graphical environment, especially when compared with older DOS machines with their dull window-less interface. But you pay for this in terms of speed as more processing power is needed to display the dialogue boxes and icons. The operating system (TOS) which handles all the graphics is not using the ST's power to the fullest; text and graphics display can sometimes be painfully slow.

NVDI was written to overcome this shortcoming of TOS. By replacing the display routines with faster ones, it manages to accelerate the ST to remarkable speeds. The best part is that it does it in software; no soldering, no hardware installation – just a program and a few files that go in the Auto folder and the system is transformed.

WHAT'S ON OFFER?

NVDI comes with an installation program that simplifies the process of copying the various files that make up the package. These files include NVDI.PRG and several screen drivers for the various screen modes. The Mac-like Monaco font is included to replace the usual ST system font along with a Control Panel for configuration and a desk accessory to set NVDI's default settings.

After a reset, NVDI installs itself and the effects are immediately noticeable. Desktop windows are drawn at an amazing speed, scrolling through long documents is achieved at double speed, and dialogue boxes and menus seem to appear instantaneously. NVDI also includes GDOS which can be switched on or off at will. The advantage of using NVDI's GDOS is that it is much faster than Atari's version and should another form of GDOS be installed, such as SpeedoGDOS, NVDI automatically disables its own version to prevent a clash between the two. As a final touch, NVDI also provides a simple mouse accelerator.

Version 2.5 is Falcon-compatible and works wonders in all screen modes, especially if you use 8 or 16 bit colour. When running MultiTOS, NVDI really makes a difference, giving the system the extra speed it requires. A new feature of this version is the acceleration of off-screen VDI

Test	Time	Ratio
GEM Dialog Box:	1.310	290%
VDI Text:	0.370	962%
VDI Text effects:	1.000	780%
VDI Small Text:	0.520	757%
VDI graphics:	2.500	400%
GEM Window:	2.200	160%
Integer division:	1.550	100%
Float math:	1.635	101%
RAM Access:	1.395	100%
ROM Access:	1.395	100%
Blitting:	0.915	122%
VDI Scroll:	1.160	233%
Justified Text:	1.465	210%
VDI Enquire:	0.710	224%

GEMbench running on a Falcon – the dramatic speed increase is clearly shown.

calls so giving an additional speed increase to programs that use this technique.

ON TEST

GEMbench showed some staggering results. Running on a Blitter-equipped MegaSTE, NVDI gave an average improvement of 270% in speed – almost 3 times as fast. On an ST without a Blitter, NVDI was even more impressive bringing a speed increase of 370%.

On the MegaSTE, text routines were 5 times faster while graphics showed a four-fold increase. Even dialogue boxes redrew over twice as fast. Results on the Falcon were even more impressive – an average 414% increase in speed in monochrome screen mode. Text redraws were almost ten times faster!

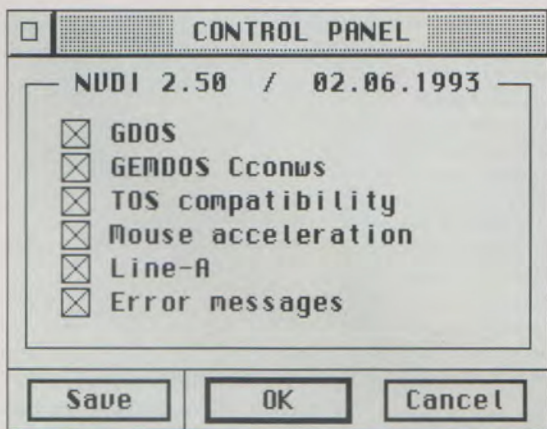
Scrolling through a long text file in 1st Word Plus took half the time with NVDI installed. Programs such as

Calamus, Calligrapher and WordFlair also showed a marked improvement, although not as impressive as the figures above as these programs also spend time calculating character shape and position, a task that NVDI cannot improve – nor can any other screen accelerator for that matter.

Compatibility is remarkable and we have yet to find a program that is not compatible with NVDI. Some programs, Timeworks Publisher amongst them, do not work with NVDI's version of GDOS but this is not a problem as the GDOS part of NVDI can be switched off and the standard GDOS installed instead.

VERDICT

NVDI has justifiably earned itself an excellent reputation and has a steadily-growing user base. It is already a standard in Germany and rapidly achieving the same status around the rest of Europe. While more expensive



NVDI parameters can be controlled via a simple-to-use Control Panel module or a stand-alone desk accessory.

ATARI ST REVIEW
ESSENTIAL BUY

than the competition, it is faster and more compatible. Currently, NVDI is the only screen accelerator that works with Overscan and on the Falcon. In short, NVDI is without a doubt a worthwhile investment for anyone who wants the best from their ST.

The fastest compatible accelerator
Good GDOS replacement

PROS AND CONS

Manual could be improved

"Difficult to think of any utility that would top a wish list ahead of NVDI – a must for all ST and Falcon owners"

NAME: NVDI 2.50

COMPANY: SYSTEM

SOLUTIONS

CONTACT: 081-693 3355

PRICE: £49.95

MIN MEMORY: 0.5Mb

SYSTEM: ALL ST/TT/FALCON

EASE OF USE ★★★★★

DOCUMENTATION ★★★★★

EFFECTIVENESS ★★★★★

VALUE FOR MONEY ★★★★★

OVERALL 92%

FULL SCREEN AHEAD!

*Being serious
about your ST
means buying a
dedicated display.
Ofir Gal monitors
the situation...*



The Crazy Dots graphics card can display 1024 by 768 pixels in 256 colours on a VGA monitor.

COLOUR ON THE FALCON

One of the best features of the new beast is its flexible video hardware. The Falcon can be used with a variety of monitors ranging from the ST mono and colour monitors to VGA, SVGA and multisyncs.

For most applications, an SVGA monitor is ideal since it can cope with almost all the screen modes the Falcon provides. Various hardware add-ons are now available that increase the screen resolution to 880 by 606 pixels and beyond and a good quality SVGA monitor will function quite happily with these devices.

The difference between VGA and SVGA? As standard, an SVGA monitor can display 640 by 480 pixels without any additional hardware in all colour modes except True Colour where resolution drops to 320 by 480. A standard VGA monitor is capable of exactly the same but will not be able to cope with extended resolutions since it is designed to display no more than 640 by 480 pixels. Both normally scan at 60Hz and the quality is usually measured in dot pitch size which indicates the size of each phosphor dot on the screen. Anything below 0.30 will produce a very clear display.

The Falcon supports overscan mode which increases the resolution by over 40% when used with a TV or an RGB monitor. The main disadvantage of using this is that most screen modes are displayed in interlaced mode, a technique that enables a monitor with only a 200 horizontal line display to double this to 400. The image is alternated rapidly, creating the illusion of higher resolution but this introduces noticeable flicker which is bearable when displaying photographic images, but is very distracting otherwise. Nevertheless, an RGB monitor can display an interlaced screen of 768 by 480 pixels in 2, 4, 16, 256 and true colour modes.

Again, a multisync monitor can display all the resolutions RGB and SVGA monitors can and more.

If you're into playing games, you'll be aware that an STM or STE can be directly connected to a standard television set via the RF socket on the rear. The signal also contains sound which appears from your TV's speaker. Now while this may seem like an advantage over other computer systems at first, TV screens are not designed for computer work. Viewing the screen from a close distance for long periods of time is tiring on the eyes and inevitably leads to the eventual purchase of a computer monitor.

The choice then comes down to one of three categories: high resolution monochrome, RGB colour and multi-sync.

MONOCHROME MONITORS

High resolution monochrome monitors are very popular among musicians and users of serious software such as DTP programs. With a high scan rate of 71Hz (which means that the screen redraws 71 times per second), they provide a virtually flicker-free image.

The technology is fairly simple. A beam of electrons scans the screen

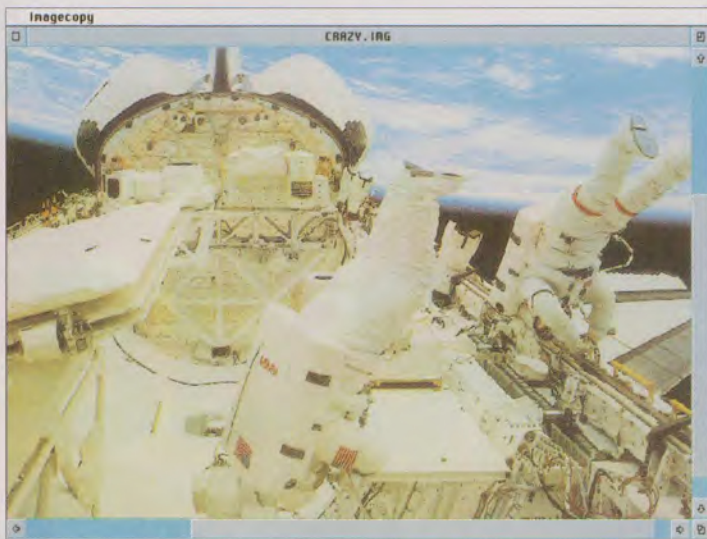


The Philips CM8833II and Atari's SC1435 are the only readily available colour monitors at present.



The same photograph of the space shuttle displayed on a Falcon in 256 colour mode.





Screen resolution on the Falcon can be extended using software or hardware such as BlowUp30.

71 times every second. On a monochrome monitor the surface of the screen is coated with phosphor. When the beam hits the phosphor it glows, producing a white dot. The image is produced by quickly switching the beam on and off as it scans the surface of the monitor screen.

The screen resolution is 640 by 400 dots which is useful when displaying musical scores, graphic designs or small typefaces. Since they are much simpler in construction than colour monitors, they are relatively cheap at around £150 pounds. Due to the current dearth, second-hand ones are rare but cost around £100 if you can find one; look for the older Atari SM124 or 125 monitors, the latter having an integral swivel stand.

COLOUR MONITORS

While a monochrome monitor produces a high quality image it is

not of much use for colour graphics or games. A colour TV is one possibility, but if you are after quality, a colour monitor is far more suitable. The scan rate on a colour TV is fixed at 50Hz, a rate that produces a visible and highly annoying flicker. With a colour monitor it is possible to switch to 60Hz which makes a big difference. There are various public domain programs that allow you to switch the scan rate and *James*, the alternative control panel, is recommended as it also incorporates a screen saver.

The ST automatically detects which monitor is connected to it and enables the appropriate choices of resolutions on the desktop. With a colour monitor there is a choice between medium and low resolutions. In medium resolution, the ST can display four colours on screen at a size of 640 by 200 dots. If you use a word processor such as *First Word Plus* to display text, this is enough room to show 25 lines of text each

containing up to 80 characters. In practice, only 20 lines are visible since some screen space is occupied by the menu bar and any window gadgets.

In low resolution the number of colours is increased to 16 but the screen size is reduced to 320 by 200 dots – not very useful for word processing but effective for games and colour graphics.

Internally, a colour monitor is very different from a monochrome one. Instead of one electron beam there are three, one each for red, green and blue, hence the reason that such monitors are referred to as "RGB". By mixing the three beams and varying their intensities, any colour can be produced. This means that the electron guns need to be capable of rapidly varying the intensity of the beam, unlike a monochrome monitor

where the beams are simply switched on and off. Such technology accounts for the higher price.

At the moment there is a limited selection of colour monitors for the ST. In fact, there are only two to choose from, namely the Philips CM8833 mk II and Atari SC1435. The monitors are almost identical and both provide stereo sound when connected to an STE. The Atari SC1435 retails at £199 and includes a tilt and swivel stand and while the Philips model is more expensive at £229, it supports various video modes, which make it suitable for use with other computers such as the Commodore Amiga. Both monitors have volume, contrast, brightness and horizontal screen position controls.

There are some older Philips colour monitors such as the CM8833 mk I, which is perfectly suitable for the ST, and the 8852 which requires a special lead to connect the ST to the SCART socket on its rear. Very similar to the CM8833 mk I is Atari's own SC1224; expect to pay around £100 for a second-hand unit.

ANY OTHER OPTIONS?

There is a third category of monitor that will function with the ST range; Multisync monitors are capable of displaying all resolutions including ST hi-res. While most multisync monitors feature an array of controls to enable accurate picture alignment, so helping them to cope with the Falcon video modes and almost any computer system and graphics cards, such flexibility costs.

Complex colour images can be displayed in ST low resolution, which only supports 16 colours, with a program that uses dithering techniques such as ImageCopy and GEMView.



COLOUR GRAPHICS CARDS

There are various ways of extending the graphics capabilities of the ST.

AutoSwitch Overscan is a cost-effective enhancement that can extend screen resolution beyond the normal limits. ST high resolution can be extended to 720 by 480 pixels, ST medium to 752 by 280 or more, and ST low resolution to 400 by 280. AutoSwitch Overscan does not improve the colour capabilities of an ST and can only be fitted to STfms and Mega STs.

Crazy Dots is a very powerful graphics card. The number of colours is extended to 256 or 32,000 depending on the card, and resolution can go up to 1600 by 1200 pixels interlaced or 1024 by 768 non-interlaced. The card connects to the VME bus which is only available on the Mega ST, Mega STE and TT. Such extended resolutions are ideal for DTP and music scoring applications.

The **Falcon** video hardware is capable of various tricks. With an RGB monitor, overscan mode is built into the hardware and can be switched on with the help of a small program. As mentioned in the other box, an RGB monitor is only able to display the higher screen resolutions in interlaced mode but there are now various programs and hardware add-ons such as **FalconScreen**, **BlowUp030** and **ScreenBlaster** that extend the resolution up to 1024 by 768 pixels. These products only work with SVGA monitors and perform best when used with a multisync.



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£400**

*We're giving
away a fabulous
Star LC24-200
colour printer in
this month's free to
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2. How many resident LQ fonts are there?
3. What does SLQ stand for?

Send your entry on a postcard or the back of a sealed envelope to *Reach For A Star Competition, Atari ST Review, Europa House, Adlington Park, Macclesfield SK10 4NP.*

Only one entry per household – multiple entries will be used to light the barbeque. The editor's decision is final and no correspondence will be entered into. The winner will be the first correct entry pulled out of Vic Lennard's sock after the closing date, August 19, 1993, and will be notified by us as soon as possible. The prize does not include a Centronics printer lead, available from most computer dealers.

Would you like to get more involved in the world of colour? Well, this month, we're offering one lucky reader the chance to do just that with a great prize of a Star LC24-200 colour printer.

The LC24-200 is a 24-pin colour dot matrix printer that features a print speed of up to 222 characters per second in draft mode. It has a 30 kilobyte buffer and selectable push or pull tractor feed. DIP switches are set electronically, giving you full control, and you have a choice of 10 resident Letter Quality fonts with optional font cards available as an option including Super Letter Quality. The printer is industry standard compatible and even comes with a fitted plug. All you need to provide is a printer lead!

To win, all you need to do is look at the three simple questions below and send the answers on a postcard to us here at *ST Review*. The first all correct answer pulled out of the hat after the closing date, Thursday August 19, 1993, will win this superb prize.

PUBLISH AND BE SCANNED!

Maurice Collins considers ways of getting colour images from paper to screen with a look at the Epson GT6500 scanner...

ATARIST REVIEW
ESSENTIAL BUY

If you're into desktop publishing or graphics you will probably have already invested in a hand scanner. Some are better than others but the limitations are all too obvious, especially when you want to work in colour or scan images larger than 4 inches across. Scanning full colour, A4-sized images is now well within reach of the home user, though, as Epson has recently launched a mass market colour flatbed scanner, the GT6500. With CGS's Look II driver software, anyone with an ST, TT or Falcon can now scan high quality colour or greyscale images at up to 1200 dots per inch resolution.

The GT6500 comes with two different interface options, SCSI or parallel. SCSI is the preferred choice for professionals as it tends to be much faster but parallel connection is generally easier on an ST as no host adapter is needed.

The scanner is capable of producing 24-bit colour, 256 greyscale or single bit monochrome images and there are some built-in halftoning settings too. The maximum size is just wider than A4 and while the scanning



The scanner can pick out a high level of detail (the original scanned area is under two inches across).

resolution is only 300 dots per inch, less than many hand scanners, it uses built-in interpolation techniques and a zoom mode to output images at much higher effective resolutions.

Connection to an ST or Falcon is via the printer port using a custom

cable that runs to the Centronics-style plug at the back of the scanner. The on/off switch is at the front and the mains socket (with detachable power lead) is at the back.

On the front control panel are four LEDs, a digital indicator and three other buttons. The buttons are used to control various scanning parameters from selection of one of seven brightness level to various magnifications ranging from 50% to 200% in 1% increments. Various combinations of the buttons also start the self-test and the direct-to-printer mode which means you can connect a colour printer (Epson LQ2500/2550 or 860 compatible) and use it as a colour photocopier!

Whatever else it is, the GT6500 isn't the kind of thing you can bundle in a drawer after use. It has a slightly larger footprint than the average printer at 22.4 inches (568mm) deep by 13.1 inches (333mm) though it is only 5 inches (125mm) high. It weighs a hefty 20lbs (9kg) and looks just like a small photocopier, with a lid on top that opens to reveal a glass plate. The lid is flexibly hinged so you can scan from thick books or other objects.

The documentation is predictably PC/Mac oriented but there's plenty



P...p...pick up a scanner? Or are Epson inferring that you can even use one at the South Pole! Let's just call it an interesting advert...

STEP BY STEP

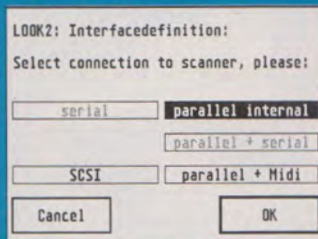


SCANNING BY EXAMPLE

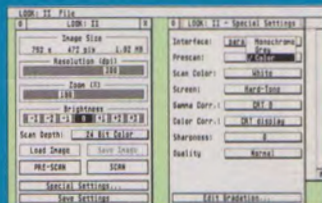
The range of resolutions and zoom levels is designed to help you scan the image in the size you're going to need it, thereby avoiding having to resize it using DTP software later. There are 23 resolution settings from 50 to 600 dpi and each correspond to standard printer resolutions such as the 144 and 216 dpi settings for dot matrix printers. In addition there is the zoom mode, from 50% to 200%, so scanning at 600 dpi at 200% offers something close to 1200 dpi.

In theory there's no difference between an image scanned at 300 dpi at 100% and one scanned at 150 dpi and 200% but the quality did appear to decline slightly as the zoom level increased. At maximum zoom and resolution, perhaps not surprisingly, the images lose a lot of colour but the detail that the scanner can pick out from a photograph is quite remarkable. On the other hand, at standard resolutions between 150 and 300 dpi, which most desktop publishers would stick to, the quality is excellent.

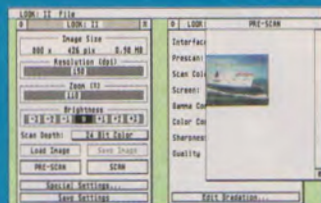
In the following step-by-step, I'll scan an image destined for a colour newsletter. Loading the scanner driver for the first time produces a dialogue asking for details of how the system is connected. I'm using a Falcon here but the system works just as well on an ST.



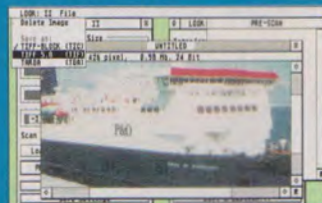
1 I've opted for parallel connection on my Falcon.



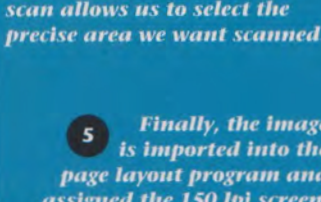
2 The next step is to set the program up as I want it - the point and click interface is a great help here.



3 Having popped the original photograph on the glass plate, choosing pre-scan allows us to select the precise area we want scanned.



4 Having scanned the image, it appears in a new window



5 Finally, the image is imported into the page layout program and assigned the 150 lpi screen.



SCANNERS PAST AND PRESENT...

The first ST scanners were simple monochrome hand scanners. They could, and still do, scan line art reasonably well but continuous tone images like photographs presented a problem. The "firmware" inside the scanners (more or less permanent software existing on internal circuit boards) dithered these images to produce a ready made pseudo-half-tone. The only trouble was you couldn't resize them without some distortion.

The next generation used software techniques

to convert the dithered image into a true greyscale by converting the dither pattern back into varying intensities of grey.

Unfortunately the resolution dropped significantly as the dither patterns were based on 6 by 6 or even 8 by 8 pixel patterns. Examples include the Naksha scanner with Touchup software that can produce 16 or 256 greyscale images, and the Power scanner which scans images as low resolution Degas files using a colour palette to represent the 16 greys.

HOW A SCANNER WORKS...

INSIDE INFO

Flatbed scanners consist of a moving carriage under the glass plate that has both an optical sensor and lamps. The sensor detects the reflection of light off the document with darker areas reflecting less light and vice versa.

The image is divided into a matrix corresponding to the scanning resolution and the intensity of the reflected light from each area of the image is then converted into an electronic signal. Up to 256 different intensities can be recorded which makes 256 greyscales in monochrome mode.

In colour mode, red, green and blue lamps are used to register the intensity of each colour. Normally the three lamps are used in a single pass but it is possible to over-ride this setting and carry out three separate passes for slightly higher quality scans. Each particular area of the image (in other words, each pixel) consists of three different intensities of red, green and blue, making a palette of 256 by 256 by 256 - or 16,777,216 - colours in all.

of useful information there to help you get the best from your images.

Epson/Look bundle is a superb package that's well-made and nicely designed. Essential for anyone contemplating colour scanning.

LOOKING IN COLOUR

The software, Look II, runs on any ST in high resolution plus all Falcon and TT resolutions.

To view the images properly, the more memory you have, the better off you'll be and I'd recommend 1 megabyte as the absolute minimum and 2 megabytes as preferred. Images that won't fit into free memory are automatically scanned directly to hard disk so even a 520 ST can scan images up to 20 megabytes or more in size if you have a hard disk with enough space on it.

Look II makes full use of GEM's multiple windows - up to seven menus and images can be open at once. The software lets you change any of the scanner's settings including half-tone mode, gamma correction, zoom, brightness and resolution. In fact, there's no need to touch the scanner's controls at all.

Images can be saved in a wide range of formats including monochrome IMG files, Targa, Calamus Raster Graphics and several forms of TIFF file including those compatible with DA's Vector, Didot Compasional and Retouche CD. It can also load and view files in Degas and NEO formats amongst others. The manual is short and sweet but the program is so easy to use you shouldn't need it. All in all, the

Fast, with good results
Excellent, flexible
software

PROS AND CONS

More expensive than a
hand scanner

"Whether you need
to scan A4 images
or colour pictures or
both, the GT6500
and Look II software
is all you need"

NAME: EPSON
GT6500/LOOK II
COMPANY: CGS
CONTACT: 081-686 8121
PRICE: £865
MIN MEMORY: 1Mb
SYSTEM: ST/STE/TT/
FALCON

EASE OF USE ★★★★★
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Would you like
your business to
have a printer with
the quality and
speed of a laser, but
with colour too?

John Mallinson
discovers Hewlett
Packard's new
DeskJet 1200C...

HOT PRINTER!

ATARI ST
REVIEW
ESSENTIAL BUY

If you run a small business that requires colour printout, you may have considered one of the colour DeskJets. However, Hewlett Packard have added a rather more upmarket version – the DeskJet 1200C. It's a 300 dpi printer (like their other DeskJets), with a print speed of six pages per minute, colour, oodles of internal memory, and a variety of effective tricks to improve print quality.

Although the 1200C only takes A4 paper, it's about one and a half times the size and twice the weight of an ordinary DeskJet. Its bulky frame contains four large print heads, a substantial print mechanism and a blow heater to dry the ink.

In terms of circuitry, functions, and processing power, the 1200C thinks it's a laser printer! With 2MB of memory as standard it composes pages in memory before committing them to paper so tying up your computer for only a short time. You can expand it in much the same way as a laser by adding extra memory, LaserJet font cartridges, and a PostScript language circuit board. Like the LaserJet 4 it has 45 scalable fonts, and it also applies the "Resolution Enhancement" smoothing technique to make text appear as if printed on a higher resolution machine. If you connect two computers to different input ports on the printer it will also detect which one is active and switch accordingly.

In shape, it is very similar to other DeskJets with trays at the front for paper going in and out. It seems happy with anything from copy paper to transparencies or envelopes (which you feed in through a slot at the back). The standard computer connection is via a parallel socket, but you can buy a variety of extra input ports.

Under the hood there are four large ink cartridges – cyan, magenta, yellow and black. These contain a newly-formulated ink that gives less spread on paper and so contributes to sharper images. Print quality is also helped by a blow heater that dries the ink immediately it's transferred to the page – there's much less time for ink to soak in, spread and smudge.



The DeskJet 1200C - impressive in size, quality and price.

Paper comes out of the printer with the ink already dry, and you don't get any of the paper buckling which most inkjets produce when squirting a lot of ink onto the page to print graphics. As a result, the 1200C prints better than any other inkjet that I've seen. Compared with the DeskJet 550C, the mono printing is smoother while the colour printing is more refined and detailed.

This is a 3-speed machine (fast, normal, high quality) with speed ratings of 7, 6 and 4 pages per minute for text in these modes. Colour graphics print at between a quarter and half of these speeds. It costs slightly more to run than a laser: HP reckon 2.2 pence per page for mono text (compared with 1.87pence for a laser), and between 7 and 35 pence per page for colour depending on the size and density of the images.

Use with an ST is easy, and simply requires standard DeskJet drivers for mono work or DeskJet 550C drivers for colour. The main limitation is that no Atari software will let you access many of the internal fonts.

Hewlett Packard's claims and ambitions for this machine seem largely justified. It should be fine as a general purpose business printer

especially as text quality is good enough for all but the fussiest user. As a colour printer, the DJ1200C lives up to expectations: good strong colours produced at a reasonable speed. You'll never get photo-realism from a 300 dpi inkjet, and complex full colour images have a clearly visible dither pattern, but for business graphics or coloured text this is not really a problem and the results are excellent.

The more I used the 1200C the more I liked it. This is a large step forward in inkjet print quality and speed, but it costs – for its price you could buy both a DeskJet 550C colour printer and a cheap laser. No one will rush out and buy a 1200C for home use,

but many businesses may want to think carefully about it. Perhaps most important for the rest of us is that it shows what cheaper inkjets will potentially be able to provide in terms of speed, sophistication and print quality. We'll just have to wait...

**"In its price range,
the DeskJet 1200C
is untouchable in
terms of speed
and the accuracy
of printout"**

NAME: DESKJET 1200C

COMPANY: HEWLETT PACKARD

CONTACT: 0344 360000

PRICE: £1632.07

MIN MEMORY: 0.5MB

CONSTRUCTION ★★★★★

PRINT QUALITY ★★★★★

FLEXIBILITY ★★★★★

VALUE FOR MONEY ★★★★★

OVERALL **95%**

**Fast and versatile
High quality mono printing
Excellent colour**

PROS AND CONS

Expensive

Acknowledgement: Image of
two macaws by Steve Kelly.

NEXT MONTH

PROGRAMMING IN C!

Next month's cover disk brings you one of the finest versions of the C programming language. And not just an interpreter – a full-blown application that will quickly have you creating your own programs with the help of our initial three-page tutorial.

Don't miss such an unbelievable opportunity – this program would usually cost you £100!

ENHANCE YOUR SYSTEM!

Two products have become industry buzzwords – even before their release. *MultiTOS* and *SpeedoGDOS* are the system programs that can be used to enhance almost any Atari computer.

Are they worth buying? What will they do for you? Issue 17 will bring you a comprehensive, practical guide to using these programs, written in a way only *ST Review* can deliver...

LASER PRINTERS

With nearly a dozen small laser printers on the market at street prices of less than £600, we look at three of them and give you our unbiased opinion.

INSURANCE

What would happen if you dropped your ST – is it insured for accidental damage? Does it make a difference if you use it for business from your home? How much do you get if you make a claim? For the answers to these questions and many more, read the first part of "In The Know" next month...

...plus full reviews of a whole host of products and games, tutorials and all the regulars.

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WRIGHT ISSUES

One-way traffic



I was watching Open University the other morning (while ironing, making breakfast and generally multi-tasking again) when Leonard Tramiel suddenly appeared on the screen. He was being interviewed at the UK launch of the ST in 1985 and his words made some things a lot clearer.

"Basically the sort of research we do at Atari is very different from what you'd be used to," he said. "We ask ourselves, what do we need, and we also talk to the dealers ... it's not a real formalised market research." His bad English, not mine, incidentally.

What do WE need! A telling point, Mr T. Shouldn't you have been talking to the user too? What's more, he might have talked to the dealers then, but the chaps at Slough don't appear to be doing so now. Many of the UK's Atari dealers and developers are privately grumbling like mad about Atari's ivory tower attitude. There's just no communication between the people in Slough and the third parties out there doing their best to make a living from the ST market. Since the launch of the Falcon, none of the ones I've talked to recently have had so much as a courtesy "how's it going?" telephone call.

Atari have got a real communication problem – and it's all one-way. There's plenty of user feedback in the magazines, on the bulletin boards and conferencing systems, and presumably the telephone support lines. There's no shortage of dealers with opinions on what should be done either. Atari just don't seem to listen.

Here's another example of the company's apparent inability to pick up the phone and talk to people. Atari's press office sent out a release listing sixteen Falcon products, all of which were supposed to be "currently available". It's now a month since that release and you can still only buy half of them!

Six of them were from a well-known UK distributor. It transpired that only one was actually on sale and the others were still under development. The worst part of it wasn't that the information was wrong – the PR "rule book" says you can make up what you like in a press release as long as the client approves it – but that nobody had even bothered to ring and check the facts first!

Now I don't mind being bombarded with propaganda – it's my job to sort out what's rubbish and what's real – but I do hate to be treated like an idiot. Clearly Atari expected us to print this bunkum, in which case you'd be entitled to believe it, wouldn't you? And we all know who you'd complain to then...

Andrew Wright is a freelance contributor to various ST, PC and DTP magazines and has been writing for *ST Review* since its inception. Quite how his work will suffer when Atari remove him from their press release list is anyone's guess...

ON SHOW

How exactly is colour displayed on an ST? Ofir Gal has all the answers...

The colour situation with the ST range is confusing to say the least. Yes, it can display a maximum of 16 colours – simple enough. But the STE has a palette of 4096 colours while the ST has only 512 – what does this mean? And why is it that more colours means less workspace and a reduction in screen resolution? And how can a graphics card like Crazy Dots extend the colour range and screen resolution of the humble ST? Good questions...

SCREEN MEMORY



The ST supports three basic screen modes – high, medium and low resolutions. Time for a short guided tour of the computer's memory...

High resolution mode on the ST gives two colours. Usually referred to simply as monochrome, or mono, mode, it has a screen display of 640 pixels (or dots) wide by 400 pixels high, each of which can be either black or white. Each of these screen pixels is represented by one binary digit, or bit as it's normally referred to and so



With 256 colours, dithering is still required to create the impression that more colours are actually displayed. The higher the screen resolution, the better the dithering can fool the eye.

takes a value of either 1 or 0. So, each screen pixel is allocated a bit in memory; if the bit is 1, the pixel is black and if it's 0, the pixel colour is white. Since the display is made of 640 by 400 pixels, or 256,000 in total, this is the number of bits required to represent the display in memory.

Computer memory is measured in bytes which are simply groups of 8 bits. Dividing the total number of bits by eight shows that 32,000 bytes is required for the screen memory in high resolution. If you've ever taken a screen grab in hi-res, you'll recognise this figure. When the ST was first

launched, it boasted 512 kilobytes of RAM and it seemed perfectly reasonable to limit the display to just 32,000 bytes. However, one of the strengths of the ST at that time was its ability to display colour...

COLOUR AND RESOLUTION

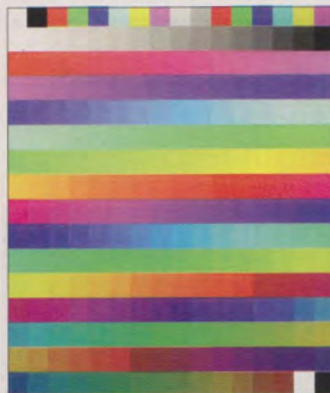
Medium resolution is capable of displaying four colours. These are usually black, white, red and green although they can be modified in the *Control Panel*. Using one bit per pixel for colour display is no longer viable – 2 bits have to be allocated for each pixel. This gives four distinct number combinations – 00, 01, 10 and 11, exactly what we need to represent four colours. The down side is that twice as much memory is now required and so the screen resolution is halved to 640 by 200 pixels.

Low resolution increases the number of colours to sixteen, four times more colours than in medium resolution. Does this mean that four times as much memory is required? No – 4 bits can represent 16 distinct colours as shown in the colour table (figure 1). You can easily see how all the possible bit combinations are used to represent the 16 different colours, even without understanding exactly how the binary numbering system works.

Since four bits are required to represent each dot, the screen

FIGURE 1: COLOUR TABLE

Colour	Number	Binary
White	0	0000
Black	1	0001
Red	2	0010
Green	3	0011
Blue	4	0100
Cyan	5	0101
Yellow	6	0110
Magenta	7	0111
Light Grey	8	1000
Dark Grey	9	1001
Dark Red	10	1010
Dark Green	11	1011
Dark Blue	12	1100
Dark Cyan	13	1101
Dark Yellow	14	1110
Dark Magenta	15	1111



The Falcon features a 256-colour mode with a palette of 262,144 colours.

COLOUR ON THE FALCON

The new Falcon features extremely flexible video hardware. This supports an array of screen modes and also lends itself to modifications via software and hardware. While the Falcon can be connected to old-style mono and colour monitors (as well as TV sets), the most fundamental addition is that of VGA-compatibility. It can emulate all ST screen modes, so ensuring compatibility with older programs, but also has various resolutions and colour modes that depend on the capabilities of the connected monitor.

Colour modes range from plain old monochrome to 16-bit colour. Unlike the ST and STE, video memory size is no longer fixed which enables the display of 256 colours in 640 by 480 resolution and beyond. Thanks to the improved video, the screen resolution can be extended using very simple add-ons which retail at a fraction of the cost of graphics cards for the ST.

resolution has to be halved again which is why there are only 320 by 200 pixels available in low resolution

EXTENDED RESOLUTIONS

Unhappy with the display resolution on the ST? Then you have several options. By making use of the black border around the display area, AutoSwitch OverScan can increase screen resolution by up to 40% but this means that more memory has to be allocated to the video side of the ST.

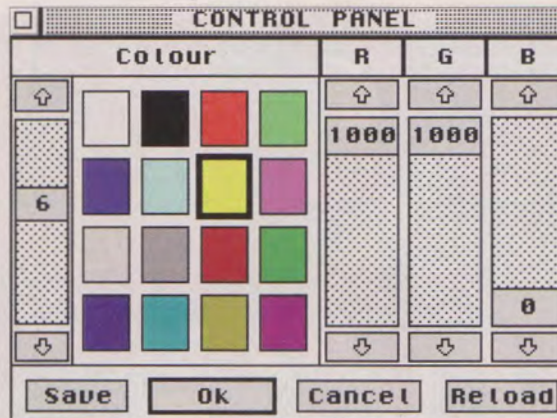
Graphics cards like Crazy Dots take a different route by adding a separate video memory board. There are currently two versions of Crazy Dots – one capable of 256 (8-bit) colour display with a staggering array of resolutions up to 1664 by 1200 pixels, while the other can display 16-bit colour, a total of 65,536 colours.

Another issue is scan rate or the number of times the screen refreshes per second. On a monochrome

monitor this is fixed at 70 refreshes per second (70Hz) which gives a flicker-free image. TV monitors are only capable of a 50Hz display (60Hz in America) but colour monitors have a choice between 50Hz and 60Hz, the latter producing a clearer image.



The true colour mode on the Falcon is capable of displaying 65,536 colours simultaneously, making the palette concept redundant.



The Control Panel can be used to mix red, blue and green to produce almost any colour. Here yellow is produced by mixing red and green.

Various AUTO folder programs and desk accessories allow you to switch between these two rates.

DITHERING

There are several image utilities, commercial or shareware, that can display 256-colour images on an ST by using dithering techniques or palette switching. Dithering works by mixing pixels of different colours to create an illusion of more colours than there actually are. Displaying adjoining blue and yellow pixels in a half-random pattern creates the illusion of green if viewed from a reasonable distance. There are various different dithering algorithms, and some programs support several of them, enabling you to choose the one that works best with a particular image.

THE COLOUR PALETTE

While the ST can only display 16 colours at a time, it supports a colour

palette which means that a wider selection of colours can be chosen from.

The palette works by allowing each of the 16 colours to be a mixture of the primary colours red, blue and green. On the STE, the total number of possible palette colours is 4096, but on the STFM the choice is only 512 colours. The Falcon has an incredible selection of 262,144 colours!

Using the *Control Panel* it is possible to change the palette and even save the new settings to disk. Programs like *Speed Of Light* take this concept even further. By quickly switching the palette, *Speed Of Light* can display 256-colour images and while some flicker is introduced, this can be minimised by setting the scan rate to 60Hz. Using this technique, *Speed Of Light* can display any shade of green, for example, by swapping the palette setting continuously between appropriate shades of blue and yellow.

FROM TWO COLOURS TO TRUE COLOUR...

The same true colour picture shown in various screen modes ranging from two colours to 65,536 colours. The picture is displayed in the various colour modes using dithering techniques to compensate for the lack of colours. While the image is very poor in 4 colours, 16 colours make a big difference and in 256 colours, the quality is surprisingly good.

Interestingly, the monochrome image file requires just 13 kilobytes of memory while the true colour file needs over 200 kilobytes.



Two colours (black and white) to start with...



... followed by four colours. Picture quality is still rather poor but...



... by the time you get to 16 colours, the quality is nearly acceptable.



The Falcon can extend this to 256 colours...



... and beyond, all the way up to 65,536 colours.

FROM SCREEN TO PAPER...

*What would you do with a colour printer if you had one?
John Mallinson gives you some ideas...*

There are a host of reasons for printing in colour. First, it's fun; a lot of people derive a great deal of pleasure from using painting programs and it's nice to see the results on paper. At the other end of the scale, graphic artists and designers want to see proofs of colour page layouts before they are professionally printed. The cost of hardware and software will be vastly different in these two examples, but the aim is the same: to see what you've done.

The use of colour printing in business is growing rapidly. Presentations are often made in colour, both on paper and printed onto transparencies for overhead projection. This is an area where the major colour inkjet manufacturers (Hewlett Packard and Canon) are pushing hard for sales.

You may simply wish to print text in colour instead of the inevitable black on white. There's a problem here, and it's one with software rather than hardware. Although PC and Mac word processors may handle colour, ST programs

generally don't. However if you use a program such as *1st Word Plus* or *Protext* you should be able to edit their printer drivers fairly easily and change the codes so that, for instance, the Bold command will print red text. But you are on your own here.

These are just a few of the reasons for using colour. More of us will be lured in as colour printer prices fall and quality improves.

A LOAD OF DOTS

Dot matrix printers provide the cheapest route into colour printing.

Prices start from about £150 for a machine like the Star LC-100 9-pin, and around £250 for a Star LC24-200 24-pin, the machines we used for the sample print-outs. At the last count there were some 18 different models of 9 and 24 pin colour dot matrix printers. Some are black and white models that can be upgraded by buying a colour kit (typically about £40), and others come ready set up for colour.

Their print head has one or two

Dye sublimation printers are used for professional printing – but Sharp's JX-7000 will set you back a cool £7,500...



rows of fine pins which strike a ribbon onto the paper to make dots. Colour machines have wide ribbons made up of cyan, magenta, yellow and black bands joined edge to edge. The different coloured parts of the ribbon are lifted in front of the pins by a motorised device as required. Any line of text or graphics which has more than one colour has to be printed in several passes with the ribbon being repositioned between each. Four-colour ribbons cost two or three times as much as black ones so it's far more economical to change to black when you don't need colour.

Don't expect too much from colour printers of this ilk. The results

are quite good for simple images or solid areas of colour, but less satisfactory for more complex pictures such as our scanned photo of the macaws. When printing the macaws with the 24-pin machine the paper was quite "roughed up" by the repeated overprinting. This is essential to get the range of colours, and there was also a tendency for the yellow part of the ribbon to be dirtied by the other colours.

A SPLASH OF INK

The advantages of an inkjet printer over the dot matrix variety are even more obvious in colour models than in black and white ones. Inkjets are



CMYK

There are several different systems for describing the colour of objects and assigning inks to reproduce those colours. The one most commonly used is known as CMYK. Cyan, Magenta and Yellow are the three basic colours of inks which, if mixed in different proportions, will produce the whole spectrum. Mixing cyan, magenta and yellow equally should give black, but in practice this just doesn't happen. So most colour printers have black (K) ink as a fourth colour. The basic colours can be overprinted to give a total of eight colours – cyan,

magenta, yellow, black, red (magenta and yellow), green (cyan and yellow), blue (cyan and magenta), and white (no colour).

That's a very limited range, so colour printers widen their spectrum by using visual trickery. To get the appearance of more colours, the printing software divides the image up into areas (say 4 dots by 4 dots), and decides what colour that area should be. The software then produces a mix of dots of different colours within the area, and when looked at from far enough away the dots merge to make

the desired colour. This technique is known as "dithering" or "half-toning", and is very similar to that used by monochrome computer screens or printers to produce different levels of grey.

The problem with dithering is that it reduces the sharpness of the image. The more colours you require, the larger the half-tone areas, and the coarser the image will become. The only type of machine that doesn't need to use half-toning is the dye sublimation variety.



Panasonic's KX-P2180 costs around £160 – but the colour kit is an optional extra...

quieter, faster, and their colours are brighter and more accurate. They are also a lot more expensive and have ink-based problems.

Most inkjet inks are actually dyes. The colour is dissolved into a liquid and there's a tendency for it to be absorbed by the paper and so spread too much. Hewlett Packard list three types of potential problem (bleeding, blooming, and wicking) which are to do with different coloured inks running into each other and the unwanted spread of ink. The new DeskJet 1200C (see page 32) deals with these problems pretty well, but at a price.

There are surprisingly few colour inkjets. The two cheapest models are from Hewlett Packard; the DeskJets 500C and 550C sell for about £405 and £530 respectively. The 500C has a single cartridge with three reservoirs and sets of nozzles for cyan, magenta, and yellow ink. Black is produced by mixing these three and usually comes out with quite a colour cast. The 550C has an extra black cartridge and so is much more suitable for general purpose printing.

Canon's contributions to the colour inkjet market are the BJ-800C, a 360 dot per inch four-colour wide-carriage machine selling for about £1,350, and the CLC-10 which prints at 400 dots per inch and doubles (or triples) as a colour photocopier and scanner. The cost, however, is about £3,500. There are also models from Sharp, IBM and Apple.

A different type of inkjet that you don't hear much about is the Phase Change variety that uses solid waxy ink sticks rather than liquid ink. The ink is heated to liquefy it and then pumped out through tiny nozzles like other inkjets. It solidifies again on the surface of the paper and a roller helps it to stick. As the ink doesn't soak into the paper, colours tend to be bright and sharp. A major objection to phase change inkjets is their phenomenal price which starts at around £10,000!

For most of us the only choice involved in buying a colour inkjet would be between the DeskJet 500C

and the 550C. The 550C is definitely the better choice.

TAKE IT TO THE TOP

There are a surprising number of different types of colour printer, quite apart from those mentioned so far. Different technologies and different advantages, but none are perfect for all types of work.

Probably the most familiar is the colour laser. If that seems surprising then think back to when you last went into a copy shop and saw an enormous colour copier. That was probably a Canon machine; they can be plugged into a computer via an interface unit and then used for printing rather than copying as laser printers and photo-copiers are basically the same. Colour lasers have four different coloured toners and apply them to the paper one at a time either by passing the paper round one drum four times, or by having four drums. They cost up to £50,000.

Much more affordable, and widely used for proofing DTP pages, are the Thermal Wax printers. The print head of these machines has thousands of minute and closely-packed heating elements which melt wax from a coloured ribbon onto the paper. The "ribbon" actually consists of a roll of wax-coated plastic. The coating is arranged as a series of coloured panels that are the same size as the printing paper and are arranged in the sequence cyan, magenta, yellow and black. Printing a full page of colour uses four waxed panels and the paper pops in and out of the printer four times. Most models require special printing paper, and printing cost per page is about 50p. Colour quality is excellent, but a disadvantage is that the waxy prints are easily damaged. Cost is in the range of £3,500 to £5,000, but prices are falling.

The great limitation of most printers is in the fixed amount of ink or pigment that they can apply to the page. After all, a dot is a dot. **Dye sublimation** (or dye diffusion) printers are different and can apply a variable amount of colour – each dot can have one of 256 levels of tone. Also, because the dyes used are translu-

Even printing on Star's LC-100 9-pin dot matrix gives reasonable results...



... but once you get into the realms of the DeskJet 550C, print quality improves...



... and while colour laser printers are very expensive, the quality is stunning as this printout from a Canon CLC550 shows.



For comparison, here's the original Macaw picture prior to scanning...

cent, they can be overlaid with dyes of other colours to form intermediate hues. Finally, the dots are not sharp-edged: they merge with each other. All this adds up to images with a true photographic quality.

Dye sublimation printers use a special inking ribbon (which is, in fact, a sheet) which is impregnated with solid pigments. The print head has an array of heating elements which heat the ribbon; the solid dye turns to a gas which diffuses into a special resin-coated printing paper and causes a chemical reaction that develops it into a coloured dot. The temperature of the heating elements deter-

mines how much dye ends up on the printing paper.

There are various drawbacks with such printers. Because they don't produce sharp dots they are not very good at printing text. Also, their special paper costs about £1 a sheet and the machines themselves cost anything from £5,500 to £18,000!

Acknowledgements:

Image of two macaws by Steve Kelly.

Colour print-outs made using Imagecopy 2 from the ST Club (0602 410241).

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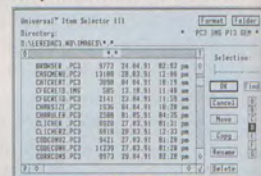
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Stone Cold Sober

Stone Cold Sober is a graphic adventure for the Atari ST, STE, TT and Falcon. It runs on colour or mono displays (without the location graphics in mono) and is ideally suited to the novice adventurer. As the name suggests, you start your quest in a pub. Your journey will take many weeks to complete and will involve a considerable amount of thought and a lot of luck. There's an element of the supernatural in this one so beware! The program is entirely mouse driven and involves almost no keyboard input at all. Stone Cold Sober was written by Simon Brown, one of the best adventure game authors of recent years and it promises to keep you glued to your screen for weeks (months perhaps)! To order your copy of Stone Cold Sober, send a cheque or postal order for £9.95 to the address below. UK postage free, please add £1.00 for Europe or £2 for the rest of the world.

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TECH TALK

Should TOS be supplied on disk?



Proud new owners of the Falcon 030 are now facing that old ST problem of early TOS versions with their new toys. The first Falcons were launched with TOS 4.01 in ROM which was quickly replaced with V4.02 and V4.04 due to numerous bugs. Owners of TOS 4.01 now have

to either use a buggy operating system, or try to get hold of a V4.02 chip set. Atari do not have a clear update policy yet, leaving users and dealers in the dark.

ROM chips can be copied to EPROMs so, in principle, dealers can supply users with an updated ROM chip at a minimal cost. There are however several problems, first of which is that TOS is copyright and so should not be copied. In addition, blowing EPROMs requires some technical know-how and rather expensive equipment. Lastly, opening the computer invalidates the warranty and many users are not too happy about installing the ROM chip themselves - it is very easy to damage the computer.

Other computer system users do not suffer from this problem. Rather than having the operating system in ROM, it is loaded from disk whenever the computer is switched on. This has the disadvantage of slowing down the boot process, especially with floppy-based systems. It was considered an advantage to have the OS in ROM when the ST was launched because hard disks were very expensive and loading from floppy could take over 20 seconds. Loading TOS from ROM, on the other hand, is instantaneous.

Falcons are sold with built-in hard disks and as the price of such drives drop, more users will be able to afford them. Isn't it about time that Atari abandoned the ROM OS in favour of a disk based one? This will be a good marketing move for various reasons. First, people would not wait until a final TOS release is available, safe in the knowledge that they can update the OS whenever they need to. So, they are more likely to go ahead and buy the new machine. This will boost the sales of the hard disk model and third party drives as floppy users get fed up with a slow boot process.

Having TOS on disk does not solve the copyright issue. It is only reasonable to assume that once you buy a computer you also pay for the use of the OS. There is no reason to charge users again and again just because the original product was faulty. Instead, Atari can take a similar approach to most other software producers, which is to charge a nominal fee for update disks and possibly a higher fee for major upgrades. It is even possible to offer users a choice between TOS on disk or in ROM.

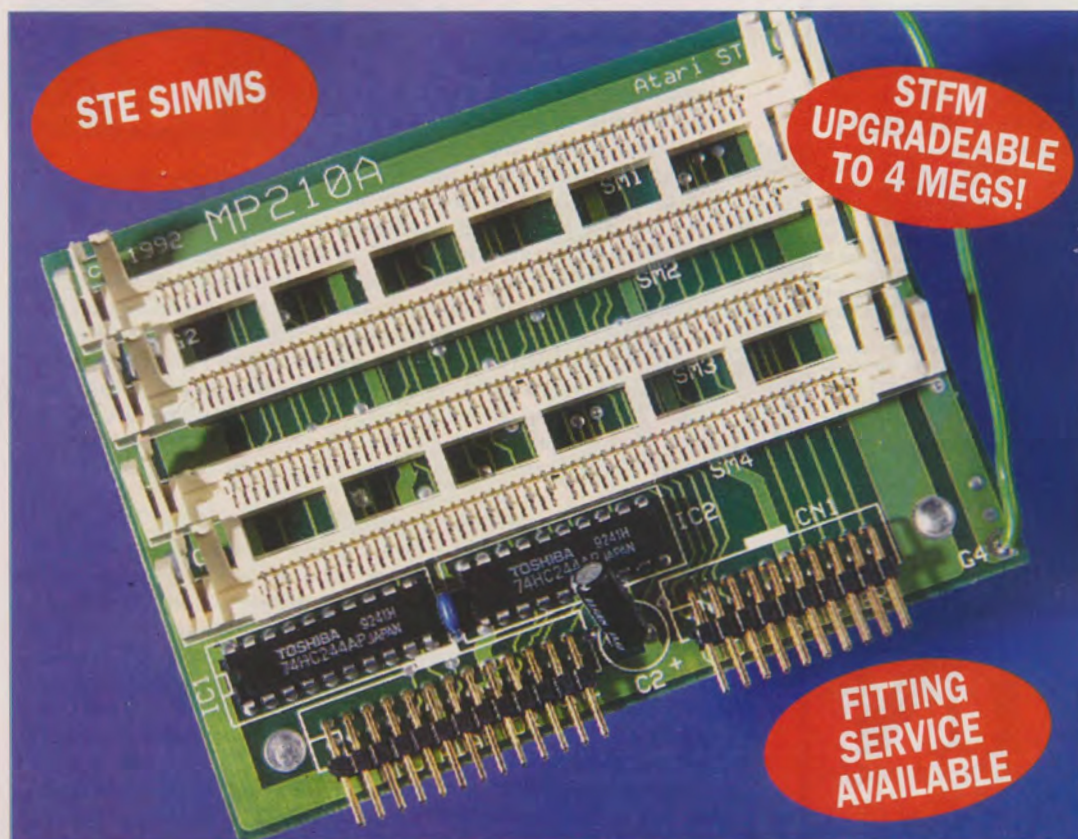
This approach is certain to catch up with Atari at some point in the future. I just hope it will be sooner rather than later...

Ofir Gal has been following a personal crusade to put HiSoft BASIC on the map through his tutorials in *ST Review* over the past 12 months. He hasn't quite sussed out how to get his ST to make him a cup of coffee in the mornings... but he's working on it!

We've scoured the ST world to bring you products you're likely to need at prices that won't break the bank...

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Fitting an upgrade yourself to an STE is very easy and costs just £9.99 including p&p. An STF/FM is a little more difficult – check our step by step guide in issue 14 – but most people have no problem and it costs £34.99 including p&p for a board that's upgradeable to 4MB later using standard SIMMs memory.

If you don't want to open your computer then let us do it for you! Prices including overnight courier to return your computer to you are £22.99 for an STE or from £39.99 for an STF/FM.

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The mouse and joystick ports on the ST could well have been designed by the same person who invented the Reliant Robin! Continuous swapping of joysticks and mice eventually damages the ports. Cost of repair? You don't want to find out! Save yourself the hassle – buy an extension lead for just £3.99!

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The entrance to Atari Workshop and System Solutions. The notice in the window is to find a lost cat!

Once again our roving reporter Tony Kaye is doing his Lloyd Grossman impression. This time, Atari Workshop gets the treatment...

THROUGH

Last month, I told you how Nottingham directs you to the parking spaces in the town. Well, anyone who's driven around London knows that the signs should have chapters of a novel on them as you are always stuck in traffic! The South Circular Road is not to be recommended at any time and must not be attempted without taking the necessary safety precautions. When I moved up to Macclesfield, I thought I'd got away from all of that "point and shoot" driving, but I was wrong!

The Atari Workshop is situated in East Dulwich (and Windsor, but more of that later), and is not connected to Atari in any way apart from supporting their range of machines. Head of the show in London is Karl Brandt, a



Karl Brandt, head of operations in London.

man of German origin and, in many respects, it shows. This is not a derogatory remark, but Karl is strong-willed and has firm opinions, qualities reflected in the type of service offered.

In October 1989, Karl and an ex-colleague, El Fernandes, started a radio service company. As fully qualified electronic engineers, they were looking to diversify into other areas. With good product knowledge of the Atari machines, they decided to offer an upgrade and repair service. The response from a few small adverts surprised them both.

Karl bought his first ST in the Spring of 1986 having been interested since they first came out the previous year. His original machine was a one megabyte 520 ST and as the Atari disk drives were out of stock, he bought a third party drive and wired it up himself using ribbon cables. Since that time, he has kept up with developments. Through keeping in

touch with friends, he found out that the ST received far better serious support in Germany than here with lots of really exciting products available. When they first started, tower cases (an alternative box for the ST) were in demand and Karl, knowing they were available in Germany, started to import them. Atari invited them to take part in the Atari '90 show and the high number of requests for the Tower system launched the Atari Workshop.

and, although not up to broadcast quality, allows changes to be made quickly and efficiently. Most of the professional customers are musicians. Many are names behind the top acts that appear on *Top Of The Pops*, but you are unlikely to know the customers themselves. Other areas where the ST is used include music publishing and theatre lighting. Architects, journalists and many other small businesses use the ST for a whole range of purposes.

The London operation has a showroom and the facilities to demonstrate everything from a piece of software to a complete networked system including opto-magnetic disk drives, floptical drives, laser printers, accelerators, overscan and many other enhancements and add-ons. Asked whether the "Power Without The Price" label attached to Atari still holds, especially with the PC and Macintosh falling in cost, Karl explains "When you compare prices, the only fair way to do it is to compare like for like. When you add in the sound and graphics capabilities, the DSP and all the other functions required along with the cost of the software, the Atari still come out favourably. So yes, the Power Without The Price idiom still applies."

Supporting Karl in London are Gordon Drayson and Margo Harwood. Gordon is Karl's "right hand man" and, apart from helping

SYSTEM SOLUTIONS

The company has two main trading names; System Solutions and Atari Workshop. The latter was basically an accident, caused by people looking for the original premises and being told that the Atari workshops were in such-and-such a unit. The name stuck as it describes the business perfectly. System Solutions deals with turnkey systems, packages, consultancy, hard disk recovery, networking systems and custom designed packages. Both come under the umbrella of Brandt-Fernandes (Europe) Ltd.

PREMISES

The Workshop was originally situated in a small office in Peckham, South-East London with just Karl and El working together. When they outgrew this, the decision was taken to split the company so that the whole





Karl discusses the layout of their latest ST Review advert with Gordon.



"A tidy workshop is the sign of a sick mind!"

THE KEYHOLE

with the day-to-day running of the technical side of the business, designs adverts and is SysOp of the Blackwater BBS. Margo is the first person you meet on a visit to the Workshop, but she is far more than just a receptionist. She helps with the booking in and out of computers and accounts, as well as other office duties. Eric Northwood is the hard disk recovery expert – "If there's a drive that needs recovering, Eric's your man!"

The Windsor office consists of El Fernandes, Tony Campo and El's wife, Sarah.

THE FUTURE

We talked about the new Falcon and its capabilities. Karl is very enthusiastic about the future of the machine, appreciating that the DSP sets it apart from any other home computer and offers endless possibilities in graphics, music and multimedia applications. For instance, the DSP can be used in conjunction with a telephone as an answering machine.

"Isn't £1,000 a bit expensive when you can buy an answerphone for 30 quid?" I asked. Karl's reply was most interesting. "The Americans have a machine that can identify the telephone number of an incoming call before it is answered. You can then decide whether to answer it or not. The Falcon can do this for you automatically, routing unwanted calls to the answering machine and alerting

you of any important calls you're waiting for. This is just one way in which the Falcon could revolutionise the home.

"Musicians can view the 'footprint' of a composition in real time. A major advancement, making life simpler. Already, the ST is found in nearly every music studio, and soon it will be replaced by the Falcon."

PRODUCTS

Atari Workshop is responsible for distributing NVDI in the UK. Karl had to convince the German publishers that there was a market here for a professional accelerator and he has been proved right with the latest Falcon-compatible version (2.50) due out at any time. There are many products

that we are grateful to the Atari Workshop for including hardware accelerators ranging from Plus Cache 16 to a 68030 50MHz version. The Mini Turbo 030 board, soon to be released, will give a phenomenal speed increase over a standard ST and will fit into an STF/M or STE.

Overscan can be added to give a larger screen size, and Atari Workshop also has support for larger monitors in Crazy Dots. A high density disk drive module is available to give 1.44 megabytes of storage on a single disk as are hard drives ranging from 40 to 1000 megabytes and beyond. Using the ICD Link host adaptor, such hard drives can be used on the ST, Falcon or, indeed, any computer with a SCSI socket.

Blackwater BBS is now on-line to

offer help, special offers, news and information on products as well as telephone ordering. The SysOp is Gordon and the board operates at speeds of up to 14,400 baud, 24 hours per day. First time users will find some restrictions, otherwise all services are available to all callers.

One of the features of the board is its ability to send upgrades and printer drivers to individual users.

WHAT NEXT?

System Solutions and Atari Workshop are planning to stay with the Atari range of computers. Karl sees a bright future with the new Atari hardware coming out although he wishes (along with others) that they'd bring it out a little faster!



Showroom facilities allow customers to try before they buy.

LEGENDS OF A GAMES PROGRAMMER...

Kevin Bulmer of Synthetic Dimensions talks to Vic Lennard about Legends Of Valour and the myths surrounding games creation...

Anyone who has been around computers for ten years or so will remember the various newspaper articles on schoolboy programmers being paid vast sums of money by games publishing houses. Perhaps that vision clouds our judgement when we think about 'computer games' in general; nothing could be further from the truth today.

Kevin Bulmer is the main designer behind *Legends Of Valour*, probably the most talked about game on the ST. Surrounded by Escher prints, I wondered how his company had originally started – games programming?

"No. DCD Ltd, to give the company its correct title, started in 1985 as a graphics studio producing magazine covers and book illustrations right the way through the full spectrum of commercial artwork down to invoices and business cards," replied Kevin. "But my particular field of interest was animation and I wanted to pursue that as something commercial. That's why we got into computer games – it was a convenient market and was lacking in strong animation at the time."

"It was very, very amateur. We approached US Gold and were initially producing an original game



Kevin Bulmer with the rather eye-catching *Legends Of Valour* poster.

idea but then they acquired the rights to *Gauntlet* in 1986 and we ended up doing the coin-op conversion across all formats. It's progressed from there."

GETTING STARTED

Surveying the various computers in the office, one could be forgiven for thinking that Kevin had probably been a teenage computer whizz-kid. Misconception number one. So how did he get involved with computers?

"I wanted to work with animation," answered Kevin. "In the early '80s, I was in sixth form college and we'd never had any experience with computers at all. I wanted to do animation, and video wasn't readily available at the time so the only way to test anything out was with ciné and Super-8 film. This meant doing the animation, sending the film off to be developed, getting it back and thinking 'that's awful'. It was just prohibitively expensive."

"So when the Sinclair ZX81 appeared, I rushed out and bought one with a 16 kilobyte RAM pack, taught myself to program in BASIC and wrote a few utilities. But I quickly discovered that it was very restrictive as far as any sort of graphics were concerned – but it was interesting and that whet my appetite."

And was an Atari computer the

logical progression from this?

"No", laughed Kevin. "I saved up for a Sinclair Spectrum, sent off my money, waited 13 weeks, cancelled the order and went out and bought an Atari 400 instead! This was leaps and bounds ahead of the ZX81. An 800XL followed with all sorts of expansion bits and pieces bolted onto it and then I got one of the first 200 STs in the country."

With the restrictions of BASIC being all too clear, what was the progression in terms of programming?

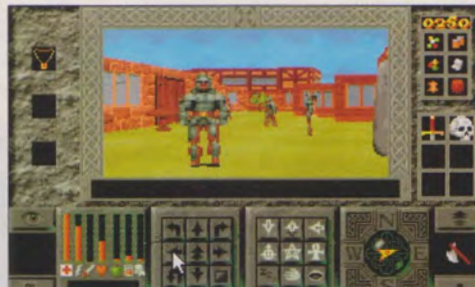
"Next stage was Action on the 8-bit Atari, which was like a hybrid between C and Modula-2. It was an excellent language, but shortly after that I went on to buy the ST and so programmed in Modula-2 which was a big mistake."

"It's a nice, structured language but incredibly verbose – a bit like C except that all the commands are at least 30 characters long with very few abbreviations!" he chuckled, stopping to take a bite out of a king-sized Snickers bar. "I rapidly lost interest in that and went straight to machine code. Assembly language on the 68000 is so simple – it's easier than any of the high level languages."

Does that mean that you get involved in writing code for the various games?

"No – people shouldn't get the

Screenshots from the long-awaited Legends Of Valour.





The Synthetic Dimensions team (left to right): Steve Drysdale, Matt Stott, Ben Daglish, Kevin Bulmer and Nigel Bunegar.

idea that I'm a programmer. It's useful knowing how to program but I'm a designer and have other programmers here who specialise. You need to be coding day in and day out to keep ahead."

GAMES DESIGN

What separates a good role-playing game from an average one? It's all down to the design of the game, but how is this initiated? I put this question to the man in the hot seat...

"We produce an idea. We think along the lines of 'what do I want to play? What do I want to see on the computer? What's going to be fun to work on for the next 18 months?' That's the sort of duration of a game development. *Legends Of Valour* took two years, but that's a bit exceptional. It has to be something that we're going to be happy with for that period of time."

So with an idea in mind, how do you proceed?

"The next stage is to prepare demonstrations to show to publishers. We do a two-page summary that comments on who the game is aimed at, why we feel it's going to be a fun product, why people will like it and how they can promote it."

Do you provide detailed documentation at this stage?

"Certainly", he emphasised, "there's a technical document which is useful for people with that kind of knowledge, and a twenty to thirty page plot outlining the main story line. This evolves in a straight line and is gradually developed. With that document, we try to have something running on computer or video to make an impact visually. We usually budget a couple of months of a programmer's time to get some way into the engine before we take it to show people."

GROWING UP

Programmers may have grown up, but does the games industry behave in the way you'd expect from a pro-

fessional business?

"The market is changing quite drastically. When we approached US Gold with *Legends Of Valour*, we had a 38-page design document. They looked at it and said 'that's great'. Now if you approach anyone, they won't look at you unless your design is at least 65 pages long!"

"We went in to see one company, who shall remain nameless, showed them a game design and the guy said 'it's not very heavy, is it?' and looked at the last page number and commented 'it's only 32 pages long'. But you haven't read it - it's in small text and has everything you need to know!"

Kevin smiled and leaned forward. "He then showed us another document which, instead of simply saying that 'mouse left = left', it had 'movement of the mouse left results in a counter-clockwise rotation of the main character' - double-spaced with a blank paragraph following. Sixty-eight pages of waffle."

Why should this kind of attitude exist?

"Our industry is growing up and it's a painful process. It's very much a

young industry with young people who started off probably knowing very little about other industries. They're trying to learn the practices of other areas and they've decided that they need documentation - they need to be like any company that's investing a lot of money. So they get a large detailed document but don't know what to do with it once they've got it!", he roared, as we both sampled the house coffee.

DELAYS

ST Review previewed *Legends Of Valour* nearly seven months ago, and yet it still hasn't been released. Why?

"We had an almost complete ST version", revealed Kevin, "but through problems on the Amiga that were out of everybody's hands, all of our attention got drawn to that version and the ST was put on hold."

"It's not simply a case of coding the ST version - once that's done, US Gold budget two to three weeks to test every nook and cranny to find any problems there might be, and video tape them. Much as we hadn't found anything, they found four bugs - nothing major but obscure things that don't always happen! People could have had the game in April, with these bugs in, but we'd rather that people get it without any bugs at all."

GAMES FOR THE FALCON?

With 16-bit colour and eight channels of digitised audio available, the Falcon must figure in Synthetic Dimensions' game plan. I put this to Kevin.

"We haven't seen a Falcon yet! We need to get hold of one and spend a couple of weeks just trying things out and stretching it to see what we can do. Then we'd be in a position to go to US Gold with a schedule of what we're going to do, what the steps are going to be, approximate duration

and cost." This begs the question of why haven't Atari ensured that one of the premiere games design teams have a development machine? Even so, Bridgett Hirst, Communications Manager for US Gold added:

"Show us the market and we'll show you the product. Based on the last figure I was told of 7,000 Falcons sold, and as Atari haven't marketed it as a games machine, games players may make up ten per cent or so. This just doesn't justify producing a game."

THE FUTURE

So what does the future hold?

"It's very exciting due to the advent of CD-ROM," he enthused. "That storage makes the propensity for graphics more realistic. One of the animated sequences at the start of *Legends Of Valour* on the PC took 1.4 megabytes of memory which had to be compressed down onto multiple floppies! Many of the new games machines are CD-based and it's very expensive to pirate CD software so if you create a game for, say, a Sega Mega Drive, you can sell 400,000 copies fairly readily. With the high prices, you get a good return on your capital."

And the ST?

"We've been working in 24-bit colour computer graphics for the past three years, but when you cut it down to 16 colours for the ST it's so disappointing. But we'll work on the ST for as long as people pay us to do so."

FINAL ADVICE

Many of you reading this may harbour ideas of becoming a games programmer. I asked Kevin for any final advice.

"Go and get a balanced education. Learn about art, design... and literature - every plot you create has to be accurate down to the smallest graphic! And I never want anyone to interpret my comments as a recommendation not to go on to higher education - university courses in 3D design are well worth considering."

EXCLUSIVE!

While at Synthetic Dimensions, I was given a sneak preview of a brand new character. Tentatively nick-named "Blastro", he was ray-traced and rendered on an Amiga 4000 and currently exists only in a couple of short animations. But he'll appear somewhere sooner or later...



Blastro's an endearing little character - a bit like RoboCop meets Rambo...



GAMES PAST & PRESENT

Since 1988, Synthetic Dimensions have been involved in eight games for the ST, namely; *Gauntlet II* (1988), *Galaxy Force II* (1989), *Hot Rod* (1989), *Resolution 101* (1990), *Corporation* (1990), *Golden Axe* (1990), *Terminator II* (1991) and *Legends Of Valour* (1992). Their current project, *KingMaker* is scheduled for release in Summer 1993.

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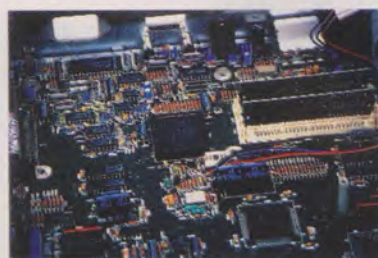
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KOLOR FORA

Colour is probably the single most important aspect of our lives – so how do computer programs get children interested in the first place? Colin James goes back to school...

Colours – they brighten up our lives and help create moods. It's a vital part of every child's education to learn the names, effects and meanings of colours and, fortunately, colours are also great fun to play with and learn about as far as children are concerned.

If your children use your ST, or want to get started, why not treat them to one of the many educational programs or packages that encourage recognition and experimentation with colour? Most of the packages on the market aim to meet the criteria of the National Curriculum, which states in relation to art: "Pupils should be able to use a range of tools and materials and a basic visual language to make images and artefacts. Pupils should talk about their own work and why they have made it."

Usually – but certainly not always – programs which deal with colours are a part or parts of packages which feature other aspects of education as well. That's no problem – in fact, it's a positive advantage if your children want to get involved in other on-screen educational activities too. But on this occasion we're concerned with colours – the

way children react to them, use them and understand them, and it's this aspect of the packages under review that are featured here.

A colourful picture is always a conversation piece for both younger and older children. And if changes can be made to it in the light of new experiences with colour, so much the better. While computer art will never replace genuine freehand skills, there's so much children can do – and redo again and again without getting a spot of paint on anything, a major advantage.

The list of programs reviewed here is by no means exhaustive. They have been chosen for variety and different approaches to the use and teaching of colours. Except for the Fun School programs, which are for the under 5s, most of the packages are suitable for a fairly wide age range, from pre-school up to about ten or so. It almost goes without saying that all require a colour monitor or TV. As well as commercial programs, we've looked at two inexpensive ones available from PD libraries, so there's something here to suit all pockets.



PAINTING AND SNAP

This collection of six mouse-driven activities to help children develop colour and shape recognition, awareness of size and the concept of grouping objects into sets has been very professionally programmed.

As we're concerned with colours, let's start with the *Painting* activity. Here, the child can choose from a palette of 12 colours to "fill" the shapes in six different scenes. If the child makes a mistake with any of the colours, individual shapes within the drawing can be "unfilled" by clicking Clear then clicking on the appropriate part of the picture with the crayon, which is the pointer for all operations. All colours can be removed simply by clicking once on Erase. Clicking either a right or left arrow at bottom right moves the child forwards or backwards respectively through the drawings available for colouring.

To quit, the child simply clicks on a red Stop sign. *Snap*

is precisely what you might expect. Two coloured shapes are displayed; if the child is satisfied that colour and shape match, they click a tick box. If there's no match, the cross should be clicked. Levels of difficulty are set by pressing Escape and clicking on a number – from one to three in this instance. As with most of the other activities, there's a reward for a right answer – in this case, a thumbs-up from Bobby the Clown, the child's colourful "host" for four of the six activities – and a pie in the face for Bobby plus some music when sufficient right answers have been given.

Other activities are *Odd One Out*, which calls for close attention to detail including, on easier levels, colour and shape; *Big and Small*, which develops awareness of the difference in the size of objects; *Sets*, which involves grouping similar items; and the *Shape Game*, based on the old wheel of fortune.



Both items are the same colour and shape – it's a "Snap!" situation. Stand by for a thumbs-up from Bobby the Clown, and the raising of the pie level. Much more of this and it'll be pie in the face time...



COLOUR ASPECTS

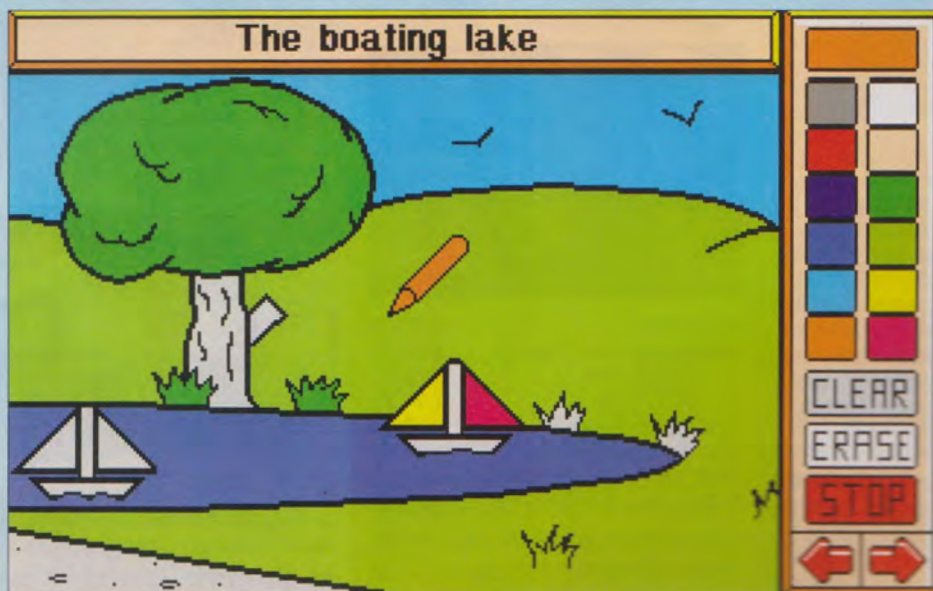
PRODUCT: PAINTING AND SNAP
(ON SHAPES AND COLOURS DISK)

FROM: RAINBOW
EDUCATIONAL
SOFTWARE

**TYPICAL
PRICE:** £7.99

CONTACT: 0392 77369

**STAR
RATING:** ★★★★★



The Painting activity in Rainbow's Shapes and Colours is a model of simplicity of design. Almost finished this one – can hardly wait to click one of the arrows and move on to the next!

KIDZ!

NODDY'S PAINT POT

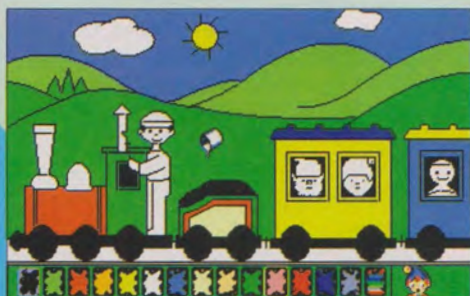
Noddy's Playtime has justifiably earned a reputation as one of the best educational packages for younger children ever written for the ST. Noddy's Paint Pot is one of ten activities in this package – if we include the "linking" program in which children drive Noddy's car around Toy Town in a unique menu system – all of which will keep children happy for hours.

Children's use of Noddy's Paint Pot can be as sophisticated or as simple as they wish, or the tutor (that's probably you, mum and dad!) feels is appropriate. The program contains the major functions found in dedicated art packages, like freehand draw, line draw, colour and pattern fill, spray can, outline and filled boxes and circles. Pen size and shape can also be selected. A number of pre-drawn outline pictures are available for colouring, and there are even characters and objects for pasting in to pictures, so small children can use the

program rather like a "Fuzzy Felt" set.

One of my own youngsters took delight in simply filling the outline drawings supplied using the paint pot fill tool, while my eldest drew her own pictures before carefully colouring them. Both thought Noddy's Paint Pot was "brilliant".

One of the many excellent features is that the picture and menu screens are kept separate, so that there's plenty of space for children to work in. The colour palette, however, is on the picture screen to save having to return to the menu (by pressing the space bar or clicking the right mouse button) too many times. And if that's not enough, Noddy's Paint Pot does not discriminate when it comes to keyboard, mouse and joystick users – kids can use any they wish to achieve their colourful creations, although the Jumping Bean Company does suggest that the mouse is best.



Only the engine driver, a few bods on the train and some bits and pieces on the engine to fill with colours from the Paint Pot now. I used to think I was no good at art too!



The Noddy's Paint Pot menu. Choose a character or object to place in your picture at top left, or, just below that, a fill pattern. Other options include pen size and shape.

PAINT POT 2

Those looking for a paint program only, without half a dozen or so other programs in the package, should take a good look at Paint Pot 2. Like all good painting programs, it can be used by all from the least experienced to the more competent child, without compromise for any level of ability.

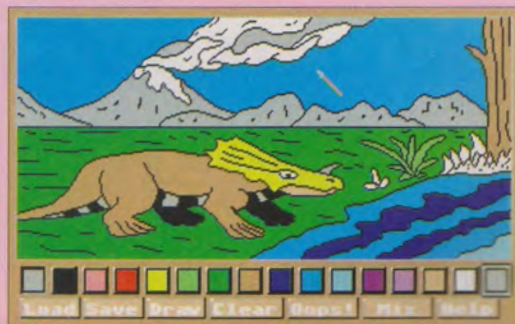
At its simplest, children can fill with colours one of the eighteen outline drawings that come with Paint Pot 2. The more adventurous who want to create their own drawings can click on Draw where they can choose pencil with which to draw thick or thin lines, square, circle and line tools, and an eraser. Clicking Exit in the drawing screen will then return the child to the painting screen, where the drawing can be coloured in.

One further, excellent feature of this package for the more advanced is the facility for colour mixing. Clicking on Mix calls up a palette of all 15 available colours. By clicking on a colour and then moving the Red, Green and Blue sliders above, the colour changes hue. It can then be used in a picture. It takes a bit of practice to be able to produce the precise colours you're after, but patience and experience wins the day.

This entirely mouse-driven program includes a save/load facility, the ability to clear the painting screen at a click of the mouse, and a good help facility which explains everything necessary to use Paint Pot 2 successfully. Pleasant melodies accompany many

activities, such as when a picture is loaded from disk and when the child changes from colouring to drawing screen and vice versa. There's also an undo facility, rather appropriately called "Oops!".

For its simplicity without being limiting for the more adventurous child, and for its tunes and excellent colour mixing facility, I have to say that if it's a pure drawing and painting package you want for you child, this is certainly one to go for.



There I was happily colouring in with Paint Pot 2 when this great big prehistoric monster came along...

**ATARI ST
ESSENTIAL BUY**



COLOUR ASPECTS

PRODUCT: NODDY'S PAINT POT
(PART OF NODDY'S PLAY TIME PACKAGE)

FROM: THE JUMPING BEAN COMPANY SOFTWARE

TYPICAL PRICE: £24.95

CONTACT: 0602 792838

STAR RATING: ★★★★★

**ATARI ST
ESSENTIAL BUY**



By clicking on Mix, children call up the Paint Pot 2 mixing palette. The idea is to click on a colour then move the sliders.



COLOUR ASPECTS

PRODUCT: PAINT POT 2

FROM: KIDS' ACADEMY (PRISMA SOFTWARE)

TYPICAL PRICE: £19.99

CONTACT: 0244 326244

STAR RATING: ★★★★★

FUN SCHOOL FOR THE UNDER 5s

The Fun School packages created the standard for other educational software houses to aspire to. The programs of interest as far as colour is concerned in Fun School 3 for the under 5s are *Painting* and *Matching*.

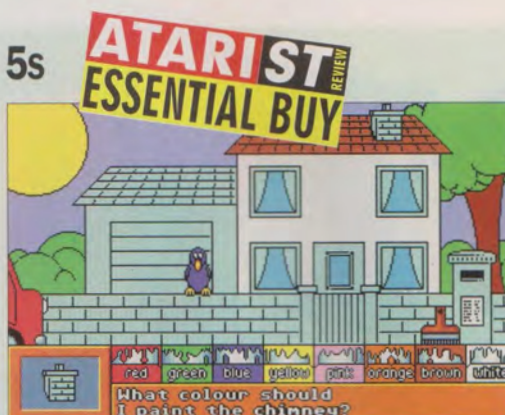
In *Painting*, Teddy asks the child which colours he should use to paint a farm scene. By pressing the space bar or the right mouse button, the child selects one of eight colours from a palette at the bottom of the screen for each component of the scene. Pressing enter or left mouse button then applies the colour. Get ready for some laughter when someone chooses, for instance, brown for the sky, or blue for the grass!

After the scene has been coloured, the child can help Teddy add some animals to the scene by selecting from a range of numbers. These can then be similarly painted. Teddy's final question is what colour the tractor should be painted. There's no tractor in sight at this stage, but once a colour has been chosen, it chugs out from behind the house – in the chosen livery, of course – and off the edge of the screen.

Matching involves the child in identifying not just pairs of shapes, but pairs of the same colour. As no knowledge of the names of the shapes or colours is needed, the game can be played by very young children with minimal assistance. With older children, the game can be used to develop colour and shape recognition. This one has three levels of difficulty.

Teddy Paint, part of Fun School 4 for the under 5s, is a painting program which demands exploration of the keyboard by the child, even though the mouse can still be the main means of applying colours and shapes to the electronic canvas.

Hitting some keys changes the colour of the brush or selected object, others select the brush shapes and objects themselves. Some keys provide instant clip art which will change colour each time it is pasted into the picture. Holding down the mouse button and dragging will place a trail of copies of the item into the picture. There are some ready-made pictures to choose from, which can be modified and added to by the child. The



White walls and a brown roof – quite a reasonable start, I think, to an exterior decoration program. Wish I could paint my house as fast as my children painted this one in Teddy's House...

whole object of this program is experimentation, and the children I saw using it all loved it.

The other program on the Fun School 4 disk of interest is *Teddy's House*. Decorating the exterior of a house has never been easier, or more fun. In level 1, the child selects, by choosing from different coloured cans, what colours should be used for various parts of the house, like the roof, chimney and windows. In level 2, the painters want to check that they have used the right colours, and the child has to find the can with the right colour on it. Level three involves the child picking the correct colours for the various parts of the house, and in painting the house by moving a hand to the correct position.

Like all fun school software, the sound effects and music in all of these programs are excellent, and on-screen rewards for the child really do encourage learning.



COLOUR ASPECTS

PRODUCT: PAINTING AND MATCHING/TEDDY PAINT AND TEDDY'S HOUSE (PART OF THE FUN SCHOOL FOR UNDER 5's PACKAGE)

FROM: EUROPESS SOFTWARE

TYPICAL PRICE: £24.99

CONTACT: 0625 859333

STAR RATING: ★★★★★



So far in answer to Teddy's questions in Painting, we have green grass, a blue sky, a brown barn and – oh dear, what's that? A pink sun? Four out of five's not bad for starters though!



COLOUR ASPECTS

PRODUCT: COLOURING BOOK BY RICHARD FARRELL, ANTIC PUBLISHING COLOURS AND SHAPES (ON THE PLAYTIME DISK BY 4HJ)

FROM: GOODMAN INTERNATIONAL AND OTHER PD LIBRARIES

TYPICAL PRICE: £2.75 PER DISK

CONTACT: 0782 335650

STAR RATING: COLOURING BOOK: ★★★★★
COLOURS AND SHAPES: ★★★★★

Colouring Book's colouring screen, with one of the pre-drawn pictures coloured in. Clicking on the rectangle at top right causes the menu to appear.

COLOURING BOOK/COLOURS AND SHAPES

Colouring Book is a drawing and painting program which is so easy to use, yet without cramping freedom of expression for more adventurous children. There are six pre-drawn images available for colouring, the first of which appears automatically when *Colouring Book* is booted, or children can draw their own then colour it.

The child chooses from a palette of 15 colours by pointing and clicking with a paintbrush pointer. Once a colour is selected, the child can fill any area of the drawing, bounded by lines, or lines and the picture border, with the chosen colour. When the picture's finished, or the child tires of it, pressing the left or right arrow key followed by the Enter key or clicking OK in the dialog that appears calls the next drawing to screen. The child can cycle through all the available drawings, either

forwards or backwards, depending on whether left or right cursor key is pressed.

To use the menu, the tutor or child clicks on a rectangle at top right of the screen. Menu options include random loading of images; saving of images which have been coloured in and loading of previously saved ones; undo; clear, which not only removes the colouring, but the entire drawing, leaving a grey workspace; draw, which permits freehand drawing on one of the images loaded from disk, or on a clear screen; line, for the drawing of straight lines; erase, which calls a square eraser for removing any chosen part of the image; and page, the menu equivalent of hitting left or right cursor key then choosing enter for a new drawing.

Colours and Shapes is one of six educational and fun games which together form *Playtime*. Written in STOS, it's bright and colourful, and includes good use of sound, including voice. There are 6 levels, the odd numbered ones being teaching levels – click with the mouse on a colour or shape and a voice tells you what it is. The even numbered levels are tests and a voice asks the child to select a particular colour and/or shape. Questions are very simple, such as "Which is the yellow car?" The child answers by clicking the relevant object. To re-hear the name of the colour or shape to be identified, the child clicks on a mouth, and to exit the program, what more appropriate than to click on a waving hand, and be bidden "Bye bye" by the voice?



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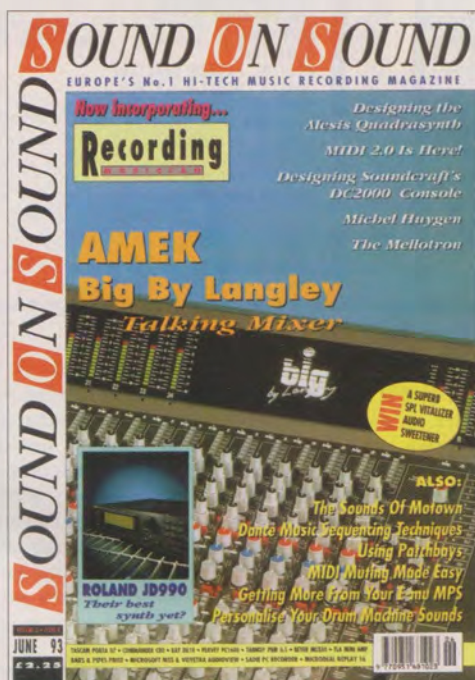
of your MIDI music gear, plus features on top musicians and producers, as well as the most in-depth, up-to-the-minute reviews of the very latest hot products — from music hardware to music software. In addition, our regular **ATARI NOTES** column brings you the latest music news for the ST, STE and Falcon.

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*Arcade-style
games that
teach you to play
an instrument?
SoundTrack's
Keyboard Trainer
looks like a
painless way
to learn.*

A major advantage of much music software has been that you don't have to be able to play an instrument to use it. A sequencer can turn you into a great songwriter, but it won't make a player out of you. Even some accomplished musicians have reported that their performing skills have deteriorated slightly since being introduced to the luxuries of sequencing software. But if you've ever wondered what it would be like to be able to knock out a tune in real-time, SoundTrack Keyboard Trainer may be just what you're looking for.

There are 62 graded studies in Keyboard Trainer. Most of them are tests and exercises, 23 are songs for you to play (accompaniments are provided) and nine games, three of which are arcade-style space adventures. A MIDI keyboard is required.

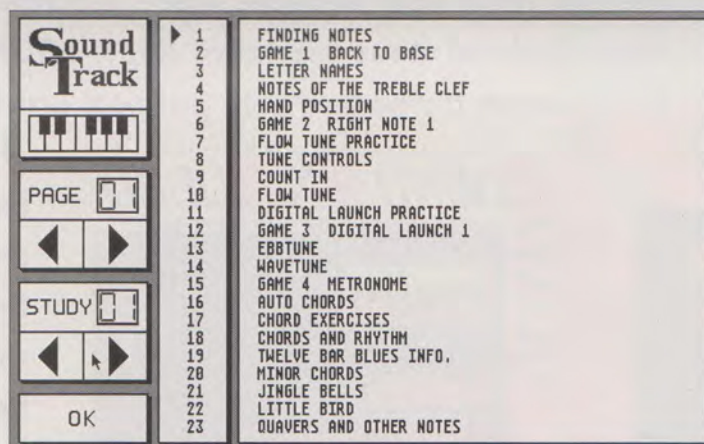
Starting with simple note recognition, Keyboard Trainer teaches and tests you in gradual steps. You decide how fast you want to go, spending as long as you like on any exercise, song or game, and you can go back to basics or jump forward to more advanced studies as and when you wish. The instructions for each study appear on the screen, making the software so easy to use that you don't need a manual (although one is provided).

THE STUDIES

The 62 studies are grouped into eight steps. Step 1 (studies 1 to 6) helps you to find your way around the keyboard itself. The arrangements of the keys are explained, and the first game, *Back To Base*, is introduced. Small markers appear on the keys of a graphic keyboard on the lower part of the screen while the rest of the screen has a spacecraft being chased by enemy forces. If you're quick enough at playing the notes marked on the screen keyboard (using the real keyboard), you'll guide the spaceship back to its base before it gets zapped, although the game ends before this if you hit too many wrong notes. As with any arcade game, you are given a score.

The letter names of notes are introduced, with special attention

PRACTICE MAKES PERFECT...



Keyboard Trainer's main screen, with a page full of studies to choose from.

given to those that will be used in the first tunes. Instructions are given about the correct hand position and how to read the numbers that indicate which fingers to use. You also get your first stab at reading notes from a musical score and playing them on the keyboard.

By the time you get through Step 2 (studies 7 to 14), you'll have already played your first three tunes. There's a note reading exercise incorporating the notes of the first tunes, and you get a chance to try coming in on time after hearing an eight-beat count-in. You have the chance to hear how each tune should be played before recording your own effort and listening back to it. The musical score is displayed on the screen, each note highlighted when it's ready to be played (*instant karaoke!* – Ed). Other options include the ability to move to any specified bar and to alter the tempo.

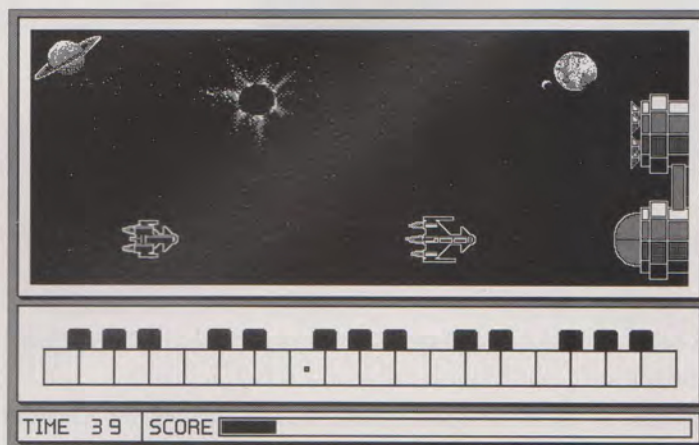
Step 2 also introduces another type of game, called *Digital Launch*. A series of rockets must be safely launched before they are blasted off their launchpads by an advancing enemy tank. All you have to do is

play a simple recurring pattern of notes as fast and as accurately as you can. There's not much thinking involved in this one – it's all down to speed, accuracy and finger strength.

Step 3 consists of another eight studies, in which you learn how to use the auto-chord functions of your keyboard (if available), have a chance to perform some more tunes

COMPUTER AIDED LEARNING

Can Keyboard Trainer replace a piano teacher? Unfortunately, (or fortunately if you're a piano teacher) not. Keyboard Trainer is an example of Computer Aided Learning (CAL) – in fact it's probably the best example of it in the area of musical keyboard skills – but the idea that all teachers will eventually be replaced by computers has been generally rejected by education experts. Nevertheless, there is plenty of evidence that this type of software can be highly useful in certain areas, especially if a teacher is present to give guidance and deepen the pupil's understanding. Its value may be greatest for those who are determined to teach themselves.



The first game, *Back To Base*, where you must hit the right notes to avoid getting blasted.

and get some extra practise at playing in time with a beat. New rhythms, notes and rests, hand positions and fresh tunes are introduced in the next 27 studies which make up Steps 4, 5 and 6.

By Step 7 things are getting quite tough, and with some perseverance you'll be ready for the most challenging game of all – *Note Invaders*. Yes, it's like space invaders, but here the aliens are notes which drop from a gigantic extra-terrestrial musical stave. To fire at a given note,

you have to hit the note on the keyboard to which it corresponds. Simple – until you try it. Finally, Step 8 gives you the remaining exercises you need to be able to learn and play extracts from Mozart's *Piano Sonata in A major* and Dvorak's *New World Symphony*. If that doesn't impress your friends, nothing will!

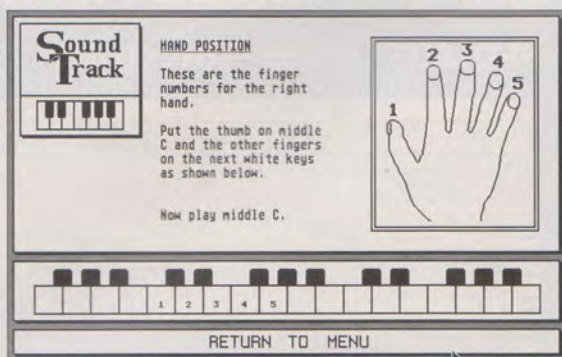
CONCLUSION

Keyboard Trainer took four years to develop, and it shows. A lot of thought has gone into the

structuring of the studies, and the fun aspect has been maximised to such a degree that you can completely forget that you're learning to play an instrument.

At £99, *Keyboard Trainer* is not cheap, although if you're only interested in the games they can be bought separately for £29.

Some studies just give information, such as this one about hand position.



Very well thought out
Great fun to use

PROS AND CONS

Awkward to set up for
unsupported keyboards
Expensive

"Well-structured studies with a hefty fun element"

NAME: SOUNDTRACK
KEYBOARD TRAINER
COMPANY: MUSIC SOFTWARE EXPRESS
CONTACT: 0752 339400
PRICE: £99
MIN MEMORY: 1Mb
SCREEN: MONO ONLY

EASE OF USE ★★★★★
DOCUMENTATION ★★★★★
EFFECTIVENESS ★★★★★
VALUE FOR MONEY ★★★★★

OVERALL 87%

Held back by
your inability to
read music?

Sound Track's
Theory Trainer II
may hold the key.

Theory Trainer II is a far more advanced version that its predecessor but follows the same structure as the original: a series of graded interactive exercises against the clock.

There are six types of test, all concerned with basic musical skills and understanding musical notation. A graphic slider control allows you to set the level of difficulty for all tests, and different questions appear each time.

All tests are multi-choice – you

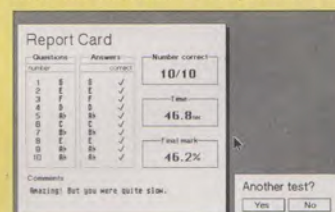
simply click on an answer. When you get one wrong you are told what the correct response should have been. Learning is by trial and error, as no explanations are offered. A report card appears at the end of each test, showing the total number of correct answers, the time taken, your final mark, and a comment on your performance.

In the first two tests, you have to correctly identify key signatures displayed on a musical stave or the other way round – the name of the key is given and you must select the corresponding signature from a stave display. Your understanding of keys is further challenged in the third test, where you must add sharps and flats to notes to make them fit a particular

key. Test Four asks you to identify intervals between notes, while Tests Five and Six examine your ability to recognise note groups and use rests correctly.

CONCLUSION

Theory Trainer II is so easy to use that no manual is required. For



The report card, with a full evaluation and comment.

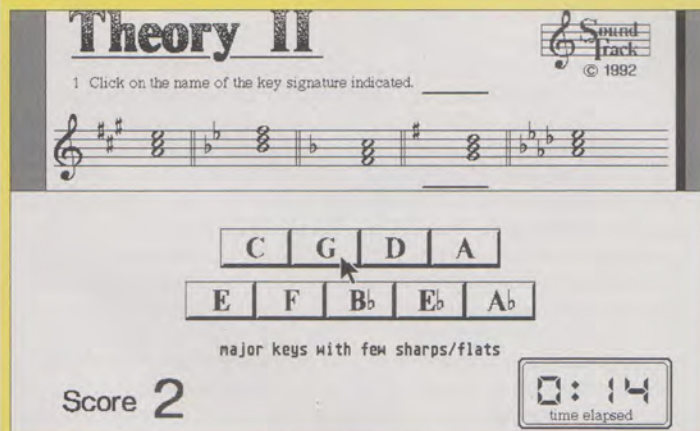
educational software, it's also quite addictive. If you keep at it you'll eventually discover how to deliver the right answers every time, but you won't necessarily gain a deep understanding of music – unless you are also receiving tuition or doing some extra reading. What it does, it does well, but it is perhaps a little expensive at £45 – *Theory Trainer* would have been a more accurate title.

"An addictive piece of educational software"

NAME: SOUNDTRAK
THEORY TRAINER II
COMPANY: MUSIC SOFTWARE EXPRESS
CONTACT: 0752 339400
PRICE: £45
MIN MEMORY: 1Mb
SCREEN: MONO ONLY

EASE OF USE ★★★★★
DOCUMENTATION N/A
EFFECTIVENESS ★★★★★
VALUE FOR MONEY ★★★★★

OVERALL 79%



Identifying key signatures. These are the easy ones, but you can set higher levels of difficulty.

Easy to use
Level of difficulty can be
finely controlled

PROS AND CONS

Doesn't provide a deep
understanding of music
theory

PLAYBACK!

Want to buy some MIDI song files?
This month we look at offerings of an
electric guitar and classical nature...

MIDI BUSKER – ELECTRIC GUITAR

STATION RECORDS • £14.95 • 0787 311500

In issue 13, we reviewed the acoustic guitar version of MIDI Busker and mentioned that the electric guitar version was on its way. Well it's nice to report that it's arrived and is every bit as good as its partner.

It's very difficult to emulate a guitar on a keyboard due to the slight timing delays that occur naturally when strumming a plectrum across the strings. MIDI Busker contains a number of riffs that can be copied and pasted from the provided MIDI Files into your own songs.

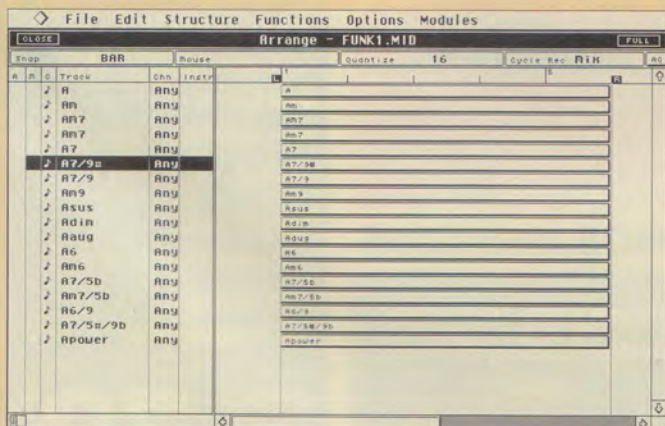
The disk covers jazz, blues and funk with the three demo songs being well worth a listen. Files are then provided for slow and fast blues, funk, jazz and reggae. Some files have the same riff played in 18 different chord shapes while others simply use the same chord shape but provide you with a wealth of different riffs. There's a total of 31 different MIDI Files for riffs along with one final offering for "starts and ends" – five typical slow blues

intros and outros.

In use, the MIDI Busker riffs are a joy. Once you get used to cutting a riff just before the beat of the bar so as not to miss the first note, the files can be used to embellish any pop song in a blues, jazz or funk vein. Using a muted electric guitar sound with the funk riffs gives quite excellent results. Still, it would be nice to see some really slinky lines to go with the solid riffs that MIDI Busker gives you.

ST REVIEW COMMENT:

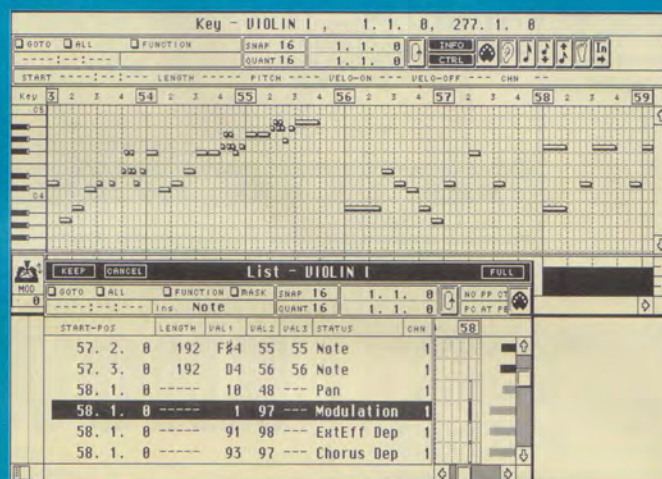
"The strum timing has been programmed into the riffs and this can make it a little awkward to copy a complete riff without missing the first note or two. The eight page booklet gives advice on this, and various other points, including use of MIDI Busker with the most popular of sequencers. All in all a welcome addition, and one that anyone who needs realistic guitar strums should consider investing in." ★★★★★



Most of the riffs are offered in 18 different chord shapes including some rather exotic varieties!

QUALITY MUSIC FILES

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While care has been taken with most of the actual notes, why use a bucket-load of chorus on all instruments and introduce deep modulation in the middle of a piece?

Well-programmed classical pieces are difficult to come by unless you want to pay around £25 per file. Proteus, a new name in the domain of MIDI song files, are knocking theirs out at half this price, so what's the catch?

Presentation is good; decent plastic box, printed label and a coherent information sheet giving the background to the music and the set-up of the files. "Eine Kleine Nachtmusik" was the first one to hit the Arrange page of Cubase, the mandatory General MIDI/Roland GS track set-up the Roland Sound Canvas at the other end of the MIDI cable and off went the music. Bearing in mind that this is supposed to be a piece for strings, the result, while sounding note accurate and with good dynamics, appeared to take on a very synth-like nature. A look at the set-up track showed that the programmer had slapped a hefty amount of chorus on all five instruments, hence the unrealistic sound. When, at bar 58, all tracks were subjected to deep modulation I decided to load in the next file. No change – the modulation stayed. Why?

Because all of the set-up data was set to MIDI channel six, and only channels one to five were in use! Very odd. The same occurred with the third movement at which point the next disk was inserted.

Vivaldi's "Four Seasons" happens to be one of my favourite pieces of classical music, but the same problems were in evidence here; too much chorus and modulation leading to a very synthetic sound. Additionally, the number of incorrect notes was higher than would be expected from a commercial MIDI File.

ST REVIEW COMMENT:

"Either these files do not load correctly into Cubase, one of the most popular sequencers on the ST, or else the quality control really has to be questioned. Comparing the info sheets with the files, some of the tempos and time signatures are wrong and why on earth the programmer is using Tremolo Depth as a controller is anyone's guess. Sorry guys – you'll have to do better if you want your comment 'all files are faithful to the original score' to ring true..." ★★

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FIRST IMPRESSIONS

TOP OF THE POPS

You may not have heard of Ascon Software. You also might not have heard of *Der Patrizier*. You would, however, if you lived in Germany, where this game has topped the charts on the PC for the best part of a year and repeated its success on the Amiga a little later. Now the ST version is nearing completion, and it looks every bit as excellent as the former versions.

The plot is a fairly contrived one, and a far cry from the console-dominated areas of princess rescuing and alien zapping. You are a merchant in the newly formed Hanseatic League – the original European Community, part of a Europe-wide trade agreement that changed Europe completely and jump-started the Renaissance. From your low beginnings as a humble merchant with little money and a single ship, you will have to rise through the ranks collecting money and power, searching for the opening that will make you mayor of your own town and eventually Alderman of the League – the Patrician, at which point the game is won.

HISTORY REPEATS ITSELF

The Patrician is a very large game indeed, taking eighteen months to create from the basic design stage. This might seem a little excessive for a trading game, but it has a lot more to offer than that.

The bulk of the game will be trading between towns, loading your ships to capacity at one port, and then searching the seas for another port which will, hopefully, buy your stock at a higher price. Rather than keep things simple, Ascon have added a whole host of different rules which affect the prices of items and keeps them fluctuating. The time of year can heavily affect prices – wool is in low supply in the winter so demand is high in the autumn and vice versa. Naturally the amount of

A game where your need to rise politically is topped only by your need to get married? Tony Dillon practises some chat up lines...

THE PATRICIAN

stock that port already holds also affects the price considerably.

GETTING STARTED

However, before you can begin to make some money, you have to have some money to trade with. You start off with a modest amount, but not enough to give you a really big step up, so you'll need to borrow money. Borrowing, like everything in this game is interconnected with everything else. In short, it's completely illegal and anyone caught doing it is subject to a very hefty fine and even imprisonment. For example, let's suppose for a moment that after a couple of years of game time, you make it to mayor and are looking to move on towards Alderman status. All of a sudden you are cornered in a bar by a strange gentleman who reminds you of the fact that at the start of your career, you borrowed two thousand Thalers from a fellow trader. He can now blackmail you, so what do you do? Do you pay him or do you hope he's bluffing?

If he isn't bluffing, then what he reveals could damage your second most important asset after money – the people's opinion. After all, you can't just become mayor by having loads of money. What the people

It might not look much like a Labour Exchange, but believe me, there's no better place to find prospective employees to man your ships.



think of you is just as important, and if your character is blemished in any way, you'll be dropped faster than the Dream Boys' jockstraps. You can rectify the situation by defending cities at time of war and throwing feasts for the residents at other times, but both are costly alternatives to just keeping your nose clean!

A STUNNING LOOKER

At the moment, the game is about 80% finished, and it already looks a blinder. Just looking around this page, you can see how incredible it all looks, with the graphics being

converted as closely as possible from the 256-colour PC version. Obviously with only 16 colours to play with, it won't look quite as incredible, but you must admit it still looks atmospheric enough.

We will have a full review in the next couple of months, but just in case you can't wait that long, there is a playable demo available from Daze Marketing for the minuscule cost of £2.99! All you need to do is send your cheque or postal order, made out to Daze Marketing to 2 Canfield Place, London NW6 3BT. If you're not hooked immediately, I'll burn down my flat...

In each city you have an office just like this one. The map lets you plan your travels, and the books contain all the buying and selling prices for the current town.



Trading isn't the only thing that can affect the well-being of the cities you travel to. Disease is rampant in Europe, and every so often the Plague will come to stay for a week or two!



FIRST IMPRESSIONS

French developers Lankhor caused a storm when they launched *Vroom* last year to rave reviews. Tony Dillon gets an early look at their next racing product.

FORMULA ONE CHAMPIONS

Did you know that the follow-up to *Vroom* has already been finished and released in France? No, neither did we. *Vroom Multiplayer*, as it's known, is essentially a six-circuit, two-player version of *Vroom*, with all the extra speed and action you've come to expect from the original. Why the odd title? French journalists don't like sequels, so no room for *Vroom 2*...

At the moment, that same sequel is being reworked once more for Domark, this time under the unassuming name of *Formula One Champions*, in light of Domark's latest sponsorship of up and coming Formula 3 driver, Christian Horner. The new title will contain all eighteen tracks from *Vroom Multiplayer* and the *Vroom* data disk, along with some interesting new features.

THAT WAS QUICK!

Coding commenced in February this year, with most of the original *Vroom* code being retained and some new routines written in, namely the addition of a second player and the new "customisation" section. Once again, coders Jean Luc Langlois and Christian Droin, along with graphic artist Stephan Polard, are handling all digital creation, and all say that the



Overtaking on the inside? Remember, when it comes to Formula One, speed is everything. So forget about the Highway Code, the Green Cross Code or any moral codes you may have!

game is better than ever. Everyone is usually found clustered around machines late at night, but take a close look and you'll see that they're not working – they're playing it for fun! A programming team that plays their own game? It must be good!

Those of you fortunate enough to already own *Vroom* will be wanting to know whether it'll be worth shelling out for this one too. After all, will there be enough of a differ-

ence between them? The answer appears to be a resounding yes. Of course you have the split-screen mode, where you can go head-to-head against a computer driver or get a friend on the track, which always enhances games. No matter how well a program is written, you can't beat the feeling of having a human opponent cursing as you swiftly overtake them on a tricky bend!

YOU GOT IT!

On top of that you'll have limited customisation of the cars. The four playing levels are still there, with each successive level boasting a higher top speed, and new features allow you to alter the wing positioning of the car as well as the tyre settings. In case you don't know, drivers often change the settings of the wings to greater or lessen the downforce of the car to suit particular tracks. Circuits with particularly tight bends need a lot of downforce to keep the car on the road, but this costs speed. Tracks with long straights benefit from little downforce.

All in all, things are looking rosy for Lankhor. They've managed to retain all of the speed and playability of the original *Vroom*, and even added a turbo to the car, so you can go even faster. The game is in no way a "true" simulation of Formula 1 driving, so don't expect another Microprose *Grand Prix* – just look forward to something fun and fast. We'll get you a full review just as soon as we can tear ourselves away from it! *Formula One Champions* will be released in August for the ST at £25.99; a Falcon version is under discussion.

The two player option allows you and a friend to battle it out on the same track. Has Pitstop II finally come to the ST?



As with Lankor's other popular race game, *Vroom*!, the graphics have been kept plain and simple to maximise the speed.

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SCREEN SCENE

LEMMINGS 2

- THE TRIBES

Once upon a time, a computer game emerged. The stars were cute little lemmings who followed each other around and died with frightening regularity. Your job was to guide them through a course in an effort to save them from certain death.

Not many computer owners can have escaped the original *Lemmings* and the follow up *Oh No! More Lemmings* and, I suspect, many had a lot of sleepless nights trying to get through the latest level. The add-on game lost a lot of the appeal of the first because of the sudden leap from the very easy levels to the downright impossible, but the legend was kept alive by the ardent fans.

In order to capture the imagination, a sequel needs to offer more than the original. In the movies, many a successful film was followed by a failure because the second offering was simply not as unique as the first. In *Lemmings 2*, the cuddly critters are still there but this

Egyptian Lemmings have a distinct similarity to the originals, but they're there too.

time, they are slightly different. There are 12 tribes, each with its own attributes. From original Lemmings to Ninjas, from Sportsmen to Beach Bums, each tribe has skills that are different. In fact, there are over 60 skills to master.



LEMMING ISLAND

All the action takes place on Lemming Island. As you complete each level, you are awarded a piece of a talisman. When all 12 have been successfully completed, you can join them all together in victory. This is not as easy as it sounds...

Each tribe has 60 Lemmings to start with. As you progress through the level, the number you save from the previous screen continue with you, so the more you save, the better your chances. At the end of each screen, you are awarded either a Gold, Silver or Bronze piece of Talisman depending on how well you did. When all 12 tribes have completed the 10 screens in the level, you can move on to the next level.

THE SKILLS

All of the old skills from the previous game are there, plus a lot more besides. There are 11 different methods of

removing ground, seven building skills, ten different movement-related choices, eight wind and ten miscellaneous skills including a SuperLem (with the ability to fly, following the cursor!). Not all activities are available at all times, so you need to practice them. Some are very similar to others, but it's the wind skills that probably take the most getting used to. A new icon gives you a fan to blow these characters around but getting across obstacles can be hard to control. Fortunately, there is a practice mode available to assist you.

Lemmings 2 has a problem. There is a little too much to do and get to grips with. The game has been made

Great graphics and animation
Interesting sound
and variety

PROS AND CONS

Too many skills to master
Over complicated

After a long wait, the best selling computer game of all time has a sequel. Rob Redfurn follows the crowd to Lemming Island to check it out...



In space, no-one can hear you tear your hair out, not even SuperLem!

slightly too complicated and, in this reviewer's opinion, less playable than the original. Having said that, it's still challenging and will keep you up late at night in just the same way as the game that invented insomnia!

"Lacks the originality of the first game but is still sure to keep you awake at night"

NAME: LEMMINGS 2

COMPANY: PSYGNOSIS

CONTACT: 051-709 5755

PRICE: £29.99

RELEASE DATE: OUT NOW

MIN MEMORY: 1MB

GRAPHICS ○○○○○○

SOUND ○○○○○○

VALUE FOR MONEY ○○○○○☆

PLAYABILITY ○○○○○☆

OVERALL **87%**



The map of Lemming Island showing all twelve tribes.



A selection of new options with the Space tribe. Jet pack, filler, diver and platformer Lemmings are available amongst others.

GAME PLAY

The long-awaited Battle Of Britain simulation finally arrives on the ST.

Dave "Biggles" Jones takes to the air for an aerial view...

REACH FOR THE SKIES

In 1940, the freedom of the people was in jeopardy. Many were worried that Hitler's Army would take over this great island of ours. All that stood in his way was a few brave men and some fighter planes.

The Battle of Britain took place between July 10th and October 31st 1940 and prompted the well known quote "Never in the field of human conflict was so much owed by so many to so few". This was part of a famous speech by Winston Churchill, Prime Minister during the war years. I wonder what Spitting Image would have made of HIM!

You take the part of a pilot or controller of either the British Air Force (RAF) or the same positions in the Luftwaffe and, unlike most war simulations, this is not a matter of winning a single mission to win the game. It's a whole campaign and the prize is the safety of a nation. You win or lose depending upon your overall performance through the game.

This is no ordinary simulation. It involves skill, tactics and most of all, time. The real thing lasted three and a half months and I doubt that you could complete this one while finishing your tea. It'll take even the most ardent war games/flight simulation fan at least as long as the real thing to successfully complete. It takes time just to master the aircraft, let alone win the Battle of Britain single handed! Most of the controls are, as with



*Tally-Ho, Chaps!
Let's take to the
air and give those
bouncers a
bloody nose!*

most games of the genre, through the keyboard, but you can select mouse, joystick, Gravis stick and even Aerochopper controller if you prefer.

Once you have mastered the basic controls of the aircraft, it's time to get out there and fly. It is important to get the "feel" of when to engage in combat and when to steer clear. There is no point in losing aircraft in minor skirmishes, only to find you haven't got enough for the bigger battles.

CONTROLLER

If you prefer, *Reach For The Skies* can be played on a more strategic level than just flying and shooting the opposition. As Controller, you are responsible for moving the aircraft

from factory to airfield, and airfield to airfield, as well as deciding which squadrons to deploy in battle. If you don't keep the supply constant or you send in a squadron that's based too far away, the battle could easily be lost. The enemy will try to reduce the strength of the RAF in many ways and to stop them, you need to second-guess them as much as possible. You can't do this all the time, but a good percentage is what counts. After all, we're talking about a time when people died in war and didn't start a political battle when one civilian was accidentally shot!

Superb graphics
and sound
Very playable

PROS AND CONS

Tricky controls
at first



A full briefing is essential if the mission is to stand a chance.

Of course, if you want to get the German perspective on the war or you're just plain sadistic, you can take the same parts from the opposing viewpoint, flying heavy bombers like the JU87 Stuka. Personally, I'd rather imagine myself behind the controls of a Spitfire or a Hurricane.

This is one superb simulation that will give lasting appeal. Anyone who appreciated the attention to detail in *Shuttle* (also from Virgin and rated very highly) will undoubtedly get pleasure from *Reach For The Skies*. The sound and graphics are excellent and the feel of the game is good and very realistic. When you get onto the higher levels and experience "real flight", you begin to admire the skill and sheer nerve of the pilots who took part in the Battle of Britain 53 years ago.

"Stunning reaction of the Battle Of Britain, probably the most important battle in World War Two"

NAME: REACH FOR THE SKIES

COMPANY: VIRGIN

CONTACT: 081-960 2255

PRICE: £30.99

MIN MEMORY: 1Mb

HARD DISK INSTALL: YES

EASE OF USE ★★★★★

DOCUMENTATION ★★★★★

EFFECTIVENESS ★★★★★

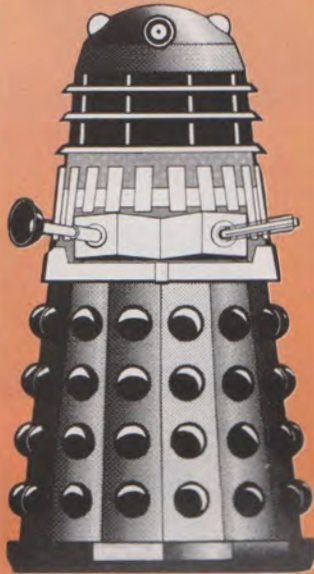
VALUE FOR MONEY ★★★★★

OVERALL **87%**

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GAMEPLAY

Stu Redman arms his weapons and takes to the skies with a surprise package from the Codemasters...



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Success is rewarded with a refreshing cuppa and... another dangerous mission.

There are certain words or phrases in our language which, when taken out of context and uttered in isolation, conjure up images within us depending on our attitudes, beliefs and dispositions. These can be applied to all walks of life, and the software industry is no exception.

Utter the words "flight simulation" for example, and most of us find ourselves thinking – *Gunship*, *F19*, and ultimately, *Microprose*. Keeping in the software vein, if I were to say "Codemasters", then it is likely that virtually everyone who is familiar with the company would envisage a small animated egg with arms and legs who answers to the name of Dizzy!

Word association. Reputation by word of mouth. Call it what you will, but Codemasters are having none of it and, acting strictly against type, present for our delectation what is for them a very different venture indeed, in the form of their very own Gulf War adaptation.

Codemasters, of course, aren't renowned for their big, all-action, innovative titles, featuring sleek graphics and bursting with every sound the ST is capable of rendering, but where they do excel is in the value for money of their products. The innumerable *Dizzy* episodes and various other platformers that hail from those stables are, generally speaking, a good few hours of honest fun. Codemasters have no illusions about being voted the world's best publishers, but they do know their market, and cater for it with virtually every release.

Firehawk is based loosely on the fast receding conflict in the middle east, as indeed is *Empire's War In The Gulf* (the title being something of a giveaway in the case of the latter); and it would be very wrong to say the games were even in the same league. This doesn't necessarily mean that *Firehawk* is a turkey though – in fact, far from it.

The mythical Republic of Lafia – a small but supposedly wealthy cluster of islands in the middle east – is the setting, and as is the case with most

states in this part of the world, peace and harmony are taking a back seat to sinister undercurrents.

Drug smuggling is big business in the Lafia Republic it seems; even more so since all the drug barons joined forces to form one huge illicit monopoly that now threatens the shaky democracy upon which the republic is run. The government find they have insufficient power to deal with the problem, and turn to the ever-willing Americans (who, no doubt, have some oil-related interests of their own) in the hope that tenuous control can be regained.

You are a helicopter pilot on reconnaissance with the Green Beret paratroopers, and it is your mission to enter the dangerous flying space of the republic and collect the paras, whose information will hopefully lead to victory.

Beginning each mission on-board ship, you are provided with three helicopter gunships and enough ammunition to put a decent sized hole in Texas. After a briefing from a Stormin' Norman-like figure with a paunch and fatigues, it's up into the air to embark on your given task.

Of primary importance is the rescue of your fellow infiltrators, who will be dotted around the islands waiting for you, and really aren't that hard to spot. In some cases, your briefing will inform you that a quick rescue is vital, or on other occasions

you will be expected to stick around and destroy as many enemy installations as you can.

Control of the helicopter is by a rotate-and-thrust method which, it must be said – given that the whole game is viewed from the air and the chopper is little more than a blur of madly whirling rotors – takes some getting used to, and may initially result in a disappointingly premature end to your efforts!

Just below your craft on the screen sits an arrow, which can be toggled alternately, so that you are given the approximate location of the grounded Green Berets and, when in the middle of the island, the location of your ship. Basically, it's a poor man's radar – but it does the job excellently.

Obviously, the Lafia drug barons are anxious to retain a stranglehold on the troubled republic, and a host of ground-based – and later in the game airborne – missiles will take you from the sky in a jiffy if you are anything less than an expert pilot. Once the paras are collected, the viewpoint alters, and you quickly find yourself fighting off waves of unfriendly gunships as they home in for the kill.

Graphically, *Firehawk* is less than brilliant, and sonically its representation of gunfire and explosions seem somewhat askew. For all that though, what we have here is an easy to play, addictive, and overall fun game



The paras are on board, but now the hard part begins as enemies approach from all sides.

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OPERATION GARFIELD

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BUDGET BUY**

LAPD • DISK NO: G.279 • £1.50 •
MEMORY: 0.5MB • PUBLIC DOMAIN • STE ONLY
• FALCON-COMPATIBLE

IN BRIEF: The plot goes something like this: Aliens have invaded earth and disguised themselves as cute, car-window animals. It's your job to waste the nasties before they achieve total world domination. Yep, as you've probably guessed, we're cruising for another totally predictable *Operation Wolf* clone, but for a change this one's actually quite good!



One man, a disk full of cartoon clip art and a very warped sense of humour. The result? - Operation Garfield!

Without a doubt the reason for its success is its use of the STE's extended graphics and sound hardware. The playfield is some ten times the size of the display and as you move your target, the screen scrolls smoothly to reveal fresh targets. A *Defender*-style map gives you a guide as to how many enemies are left and once cleared, the cuddly toys return with a vengeance in the next level. The sound effects are great and it's fully compatible with Falcon provided you use Atari's *FPATCH*.

ST REVIEW COMMENT: "It may have a thinner plot than *El Dorado*, but as games of this genre go, *Operation Garfield* is pure cream. Mindless playability of this calibre is rare indeed."

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QUEST KNIGHT

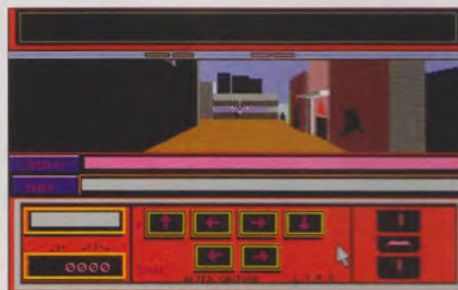
LAPD • DISK NO: L.33 • £2.50 • MEMORY: 0.5MB
• LICENCEWARE

IN BRIEF: "Surely not another a knight versus dragon game?", I hear you cry. Well yes I'm afraid it is, and this time the aim is to find the Rose of Questoria (oh come on, couldn't we be totally predictable and have a princess?). In order to achieve this goal you will need four keys which have been rather carelessly scattered around the fiercely guarded dungeons.

The game is played from an overhead perspective and you are represented by a shield. Movement is accomplished with the left mouse button and any fights you pick with the baddies will deplete your energy, although it can be restored by trekking back to the city. Errm, and that's just about it - the fight scenes are taken care of by the computer and you're left wandering aimlessly around the landscape. A shame because with a little more effort, it could have worked.

ST REVIEW COMMENT: "*Quest Knight* isn't bad although it suffers from a slight lack of action - the game tends to spend far too much time playing itself. On the other hand, it does make a change from the plethora of STOS action games."

○○○



ALIEN SAVIOUR

THE SHAREWARE COMPANY • DISK NO: BY NAME
• £1.75 • MEMORY: 1MB • SHAREWARE •
FALCON-COMPATIBLE

IN BRIEF: In a desperate bid to save the planet Zoron from destruction, you (the standard-issue interstellar Mel Gibson character) have been sent on a mission to collect three bomb-disarming keys. Once found, you'll need to head for the device itself and disarm it before every map in the universe is instantly out of date.

And don't think you're in for an easy ride because this is no ordinary 3D Construction Kit game. The city-based play area alone is enormous and the puzzles are not of the standard "shoot everything" variety. The graphic standard is also very high, although this appears to be at the cost of speed; this game is *slooooooow*. A Falcon helps a little, but even so there isn't enough speed to be truly interactive. A shame because the concept is very good.

ST REVIEW COMMENT: "*Alien Saviour* looks great, but the speed of execution is just too low to give it any playability - it's almost like playing *Driller* on a Speccy! It also has a nasty habit of crashing every now and then."

○○○

Alien Saviour's puzzles go beyond shooting everything in sight.



Quest Knight could be forgiven its "down-to-earth" visuals, but unfortunately the gameplay is almost as tedious as the graphics are simple.



Down in the dungeons and still in search of some action. Add a bit more of a challenge and we could be looking at a reasonable strategy game.

GUERROYER

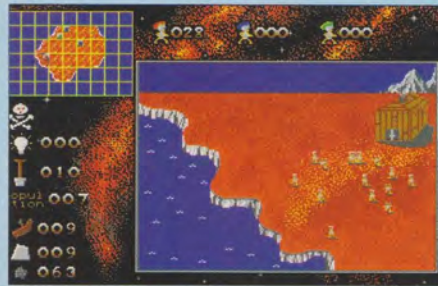
**NEW AGE PDL • DISK NO: C1.3 •
£2.95 • MEMORY: 0.5MB • LICENCEWARE •
FALCON-COMPATIBLE (BUT TOO FAST!!)**

IN BRIEF: *Guerroyer* is the licenceware equivalent of *Megalomania*. The idea of the game is to defeat two computer-played opponents, by wiping their settlements from the surface of the island-based playfield. To do this you'll need plenty of resources, so a good mining operation is a priority, and some weapons will also need to be invented to equip your armies. Each player starts with 20 citizens and this number increases as new colonies are established. The first level limits you to one invention per tribe, but as the game progresses your people will become quite advanced.

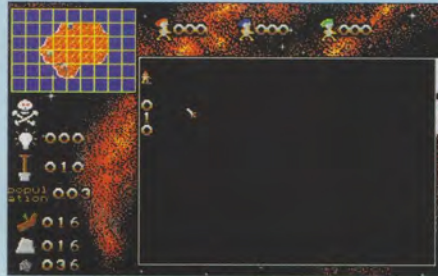
It may seem tricky to get anywhere at first, but the key is in building strong armies. With two powerful forces under your command you'll be on the second level in no time – promise!

ST REVIEW COMMENT: "*Guerroyer* is immensely playable and very easy to get into. The slow animation might seem like a turn off, but it doesn't affect gameplay in the least. Licenceware game of the year without a doubt!"
★★★★

**ATARI ST
BUDGET BUY**



Guerroyer is an engaging game which is both challenging and easy to play. Rise up my people! – The time has come for world domination!



Having invented some weapons you can begin to build an army, although ideally you need more than ten people to fill the ranks!



Unlike many PD sports sims (I use the term loosely), *Pub Darts* requires more skill than luck.

PUB GAMES

**TUMBLEVANE PDL • DISK NO: GM.087 • £1.50 •
MEMORY: 0.5MB • PUBLIC DOMAIN**

IN BRIEF: *Pub Games* is a collection of five titles all based around the old favourites we know and love (??): Darts, Billiards, Checkers, Cribbage and Pontoon. The quality varies considerably from game to game, but with the exception of 8-ball Billiards – nice to look at, but play it at your peril – all are quite playable.

Cribbage is probably the star of the show, with classy graphics and a good computer-played opponent. The sound effects are quite weak, but that's not a major problem in a game of this type. It's very easy to play but no instructions are included, so if you've never played cribbage before you are going to be in for a rough ride.

ST REVIEW COMMENT: "There are one or two duds, but generally the games are quite enjoyable (particularly when you consider most pub games are designed to be playable after a gallon of Glen Fujiyama). Darts is particularly good if you're in the mood for a two player game."

★★★



If nipping down your local seems like too much effort, Cribbage is worth a look – and don't miss next month's exclusive review of *ST Leapfrog*!

CUD LEE'S QUEST

**CALEDONIA PDL • DISK NO:
GM.163 • £2.50 • MEMORY: 0.5MB •
SHAREWARE**

**ATARI ST
BUDGET BUY**

IN BRIEF: There's certainly been no shortage of attempts to clone cute console games in the public domain, but none so far have been nearly as addictive as the real thing. Enter Mr Cud Lee, in what must be the closest we've come to Mario the Hedgehog on the ST so far.

In common with all games of this type, the object is to move around the landscape, in this case an underground castle, collecting bonuses and amassing a score that the programmer can barely fit on the screen. There's also the obligatory "cute" nasties to deal with and for a change the controls are 100% responsive. Graphically Cud Lee and his companions are a work of art – a bit small perhaps – but still stomach-churningly cute. Also included is rather a bizarre option to add questions to each door, transforming it into almost an educational title.

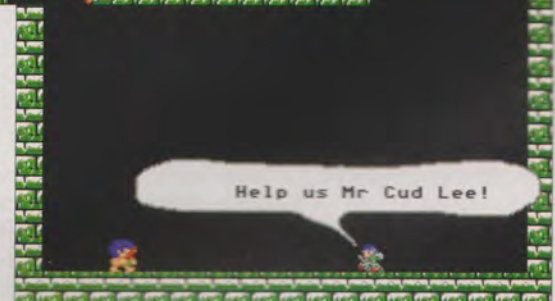
ST REVIEW COMMENT: "It's not the sort of thing that taxes your brain very far, but *Cud Lee's Quest* is still one heck of a game. With a few more levels it would be perfection."

★★★★



He's small, he's cute – he's Mr. Cud Lee on a quest to rescue the pixies. Don't let the simple plot put you off what is a very playable game.

Cud Lee's Quest is a shadow of what ST console conversions could be like.



RPGs and flight simulators take pride of place in the budget scene this month. Dave "Get Stuck In" Jones looks at three new releases...



D/GENERATION

MINDSCAPE • £9.99 • 0444 246333

IN BRIEF: A long time ago, in the dark ages of the 8-bit computers, the isometric adventure was king. There's nothing wrong with that – in fact, it's a shame that there aren't more of them. It's just that someone, somewhere decided not to bother any more.

D/Generation is a prime example of how good a 3D adventure can look. It's not the best game ever, but it's not the worst by far.

In the near future, in a gigantic scientific laboratory, scientists have been working on new forms of life. The latest incarnation is the *D/Generation*. Something has gone wrong, though (now there's a twist!), and the new life form has gone berserk.

You are a courier trying to deliver a package when you get involved in the fray and, instead of turning and running at the first sign of trouble, you decide to investigate and see what you can do to help resolve the situation. There are puzzles to solve and monsters to fight.

ST REVIEW COMMENT: This may not be the most original game you've ever played, but it is great fun and quite a challenge, too. It's big and the puzzles are well thought out, but the game itself looks a little basic and some objects can be difficult to see.

★★★★

There's a monster out there somewhere. Will he find you or will you destroy him before he does too much damage?



MIG-29 FULCRUM

HIT SQUAD PLATINUM EDITION • £12.99 • 061-832 6633

IN BRIEF: Hit Squad have a range of mid-priced games featuring some of their best products from recent years. *MIG-29 Fulcrum* is a flight simulator with a difference in that you are flying an aircraft that wasn't even spoken about in the West until it was seen at Farnborough in 1988.

The *MIG-29* is Russia's pride and joy. The craft is fast and agile with an impressive array of weapons. Unlike *Reach For The Skies* (reviewed in this issue), *MIG-29* is a "fun" simulation. While being accurate and true to the real aircraft, there is no great cause to fight for, just imaginary scenarios. Practice on some ground targets and safe enemy aircraft and then move all the way up through battling against Chinese Shenyang fighters to dodging SAM missiles over a desert scene.

ST REVIEW COMMENT: As with all flight simulators, this one takes a little time to get to grips with. It feels good, handles well and the sound and graphics are up to the mark, if not overstepping into virgin territory. The novelty of flying a Russian fighter takes Glasnost to new heights!

★★★★

Flying around in a Russian fighter feels different from the other simulators. Thank goodness the instructions aren't in Russian, too!



THE IMMORTAL

HIT SQUAD PLATINUM EDITION • £12.99 • 061-832 6633

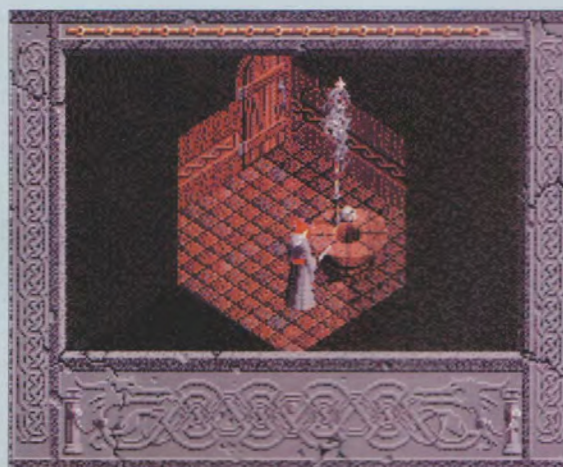
IN BRIEF: The second offering from the Hit Squad Platinum Edition collection is *The Immortal*, a role playing game that sets you down in the labyrinths below the city of Erinoch.

After years of believing that the old wizard Mordamir was dead, he calls you in a dream and you set off to find him. The dark maze holds many secrets and dangers, but you owe it to an old friend to find him if your instincts are correct and he is trapped in a bottomless cavern.

The manual reads like a hints and tips book and, believe me, it comes in handy as you progress through the game. Take note of the instructions on how to survive or, I guarantee, you won't!

ST REVIEW COMMENT: An above average adventure with plenty to keep you occupied. The style of the graphics remind you of *Gauntlet*, although the rest of the game definitely doesn't. A good way to pass an hour or two when there's nothing on the television...

★★★★



Dungeons and... well, more dungeons! Lots to explore and plenty to avoid.



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- P.19 GFA EXPERT: Massive text file and help routines for GFA-Basic 3.0. D/S
- P.18 STOS TUTORIAL: Helps make clear some of the STOS commands.

MISCELLANEOUS

- M.148 INVOICE MASTER: Invoicing system for small businesses.
- M.142 ZONK. (1Mb). Psychedelic pattern creator from Dave Henniker. (1Mb)
- M.93 STITCH MATRIX: Pattern making program for knitting machines.
- M.135 CROSSWORD CREATOR: Design your own puzzles.
- M.111 NORTHERN & EQUATORIAL STAR ATLAS: Superb serious astronomy program S/W.
- M.114 FRANGLAIS 3 & 4: Two popular French tutorial programs.
- M.106 ACCOUNT-ABILITY: Fully featured accounts program. 10 accounts, 2,000 transactions!
- M.107 RAMWORLD: Three dimensional object creator and viewer program.
- M.77 THE BIBLE: King James authorised version. 4 D/S disks/£6.00
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- M.76 FORM-FINDER: Proven horse race analysis and prediction program.
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- M.103 ULTIMATE CHEAT GUIDE: 320+ game cheats, plus hidden screens on 20 demos!
- M.1 PLANETARIUM: Excellent, easy to use, astronomy program.
- M.98 FILOFACT: Electronic filofax - diary, calendar, alarms, addresses, etc.
- M.26 GENEALOGY: 2 programs for the family historians to trace their forebears.
- M.20 G.C.S.E. STUDY AIDS: Help with Algebra, Trigonometry and Geometry.

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- G.266 WITCHES, MICE & FAIRY TALES: Games for younger users.
- M.95 ABOUT THE HOUSE: Excellent collection of programs for young children. D/S
- M.94 PROFESSOR CLEVER: Maths tutor program for children aged 5 to 11. S/Ware D/S
- M.104 SOLAR SYSTEM GEOGRAPHY: Effects of the sun & moon, on tides, seasons, etc.
- M.87 BODY SHOP: Quiz type human anatomy tutor - the knee bones connected to...
- M.105 MAGIC SPELLER: Computer speaks the word and challenges child to spell it.
- M.16 KIDZ COMPILATION: Kid Graph, Grid, Music, Notes, Piano, Publisher, sketch and story... all on one disk!

SHOESTRING EDUCATIONAL SOFTWARE (£2.95 each)

- L.01 ROBOT MOTHS: Maths tutor for children aged 6+.
- L.02 MOON LETTERS: Spelling game for ages 5+.
- L.03 PICTURE MIX: Jigsaw puzzle type game for ages 6+.
- L.04 ROBOT WORDS: 'Hangman' brought up to date.
- L.06 ALPHABET MIX: Simple jigsaw puzzle type game for early learners.
- L.10 DROP DOWN WORDS: Spelling/memory game for youngsters.
- L.12 MATHS FUN 1: Latest Shoestring title for children 4 to 7 years.
- L.29 MINI-JUMBLE: Word puzzle game similar to 'Boggle'.

COMMUNICATIONS

- C.7 VANTERM V.4: Excellent multi-function comms program.
- C.11 BBS: Three BBS systems - Citadel, Starnet and Mini-BBS.

BUDGIE U.K.

- Full range of BUDGIE U.K. software available including the following:
- BU.113 FOOTBALL TACTICIAN: 1st Div. football game for up to 24 users! (£2.75)
- BU.112 GO-MOKU: Ancient Japanese board game against computer or friend. (£2.75)
- BU.111 INTERNATIONAL CRICKET II: Animated 3D game (£2.75)
- BU.104 JETPAC: Avoid and collect arcade game from Pete Whitty. (£2.75)
- PRO.20 VIDEO MASTER: Excellent video tiling program. (£2.75)
- BU.50 SPACE INVADERS: Classic arcade action by Robert Leong. (£2.75)
- BU.90 MATCH IT: Possibly the most addictive game ever devised. (£2.75)
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- BU.52 DOUGLAS ROCKMOOR 2: Classic arcade action. (£2.75)
- BU.30 QUEST FOR GALAXIA: The 'Galaxians' return to your ST. (£2.75)
- BU.70 PACMAN ST: The definitive version by Robert Leong. (£2.75)
- PRO.26 EARLY LEARNING MATHS: Educational for 6-9 years by Philip Rankin. (£2.95)
- PRO.27 EARLY LEARNING MATHS 2: By Philip Rankin for 9-12 years (£2.95)

LICENCEWARE

- L.A.P.D. pays a royalty to the authors of programs in this section for each copy sold, hence their price which is slightly above the normal P.D. titles.
- L.48 DELUXE NOSTRAM (1Mb): Arcade platform action through 70 rooms.
- L.45 HUNCHY 1068: Arcade action with the Hunchback, multi-levels, traps, puzzles, etc. (£3.00)
- L.44 SEVEN GALAXIES: Overhead arcade blast 'em up v. aliens on an intergalactic space-cruiser. (£3.00)
- L.43 SNOTT: Platform arcade game with a challenge to save the world. (£3.00)
- L.41 MURDER ON THE ORION EXPRESS: Murder solving game set on an interstellar spacecruiser. (£3.00)
- L.40 GRIDWORD: Puzzling word game by Nise Bytes (£2.50)
- L.37 SUPER FUN: Excellent teaching program for youngsters. (£2.50)
- L.31 CURSE OF AZRIEL: Fantasy trading-adventure game. (2 disks, £4)
- L.33 QUEST KNIGHT: Fantasy adventure - search for the Rose of Questoria. (£2.50)
- L.22 GRAND PRIX MANAGER: Grand Prix management simulation. Employ drivers, mechanics, etc., test cars, then race in a full grand prix season! (2 disks £4.00)
- L.20 SUPER SPELL: Very good teaching program for 4 to 9 year olds by Lexsoft.
- L.17 ADDRESS BOOK: Neat database for storing, sorting, etc. (£2.50)
- L.18 CIRCUIT: Produce larger than screen electrical diagrams. 1Mb (£2.50)
- L.19 THEY SOLD A FEW: Three games from Ben Weston. Logic Problems, Wild West Shoot Out and Clan, a Kingdom game. (£2.50)

PROTECT YOUR DISK COLLECTION

If a virus gets free in your disk collection it can do irreparable damage in a very short time. Don't let it happen to you. Protect yourself with Mike Mee's Professional Virus Killer for just £6.95. The program identifies 529 different types of virus and bootsectors and could save you a lot of heartache if it traps that virus before it breaks free.

TEACH YOURSELF MACHINE CODE

Learn to program like the professionals with ZZ Softs book and companion disk 'INTRODUCING ATARI ST MACHINE CODE'. Be led, step by step into the secrets of programming the ST in its native 68000 assembly language. All you need to get started right away. £19.95.

AUTHORS

L.A.P.D. are always on the look-out for new material to be included in their comprehensive catalogue of P.D., shareware and liceware titles. If you have produced anything that you consider worthy of release either as P.D., shareware or liceware then get in touch to discuss it with us. We can guarantee you a worldwide exposure for your program if it makes the grade.

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Printed games catalogue now available. 18 x A4 pages of small print listing hundreds of PD/Shareware/Liceware games. 75p including P&P or 50p if ordered with disks.



CUSTOMERS WORLDWIDE ARE FINDING WE ARE THE ONES TO DEAL WITH FOR QUALITY AND SERVICE



PD ZONE

DC EXTRACT

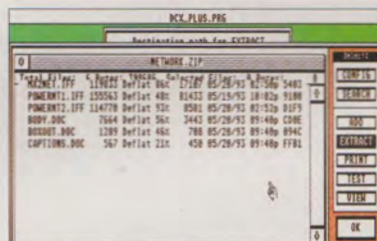
**GOODMAN INTERNATIONAL • DISK NO: GD.1962 •
£2.50 • MEMORY: 0.5MB • SHAREWARE •
FALCON-COMPATIBLE**

IN BRIEF: *DC Extract* is designed to pack and unpack archive files in all four formats popular on the ST – namely ARC, ZIP, LZH and ZOO. It's particularly handy for those who spend time on bulletin boards and who come across most of these formats, most of the time.

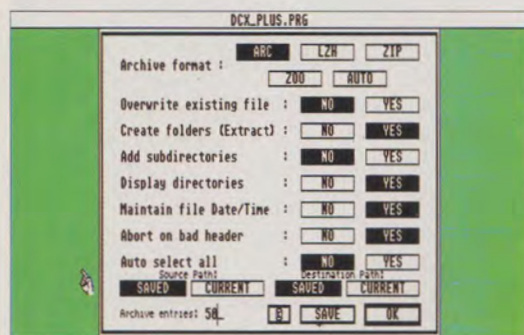
Unlike many of its competitors, *DC Extract* is not just a shell – it contains the compression algorithms too, so you don't have to go rummaging around in the public domain for extra utilities to get it up and running. A GEM dialogue box is used to control all the usual view, extract, archive commands and particularly nice is the way compression rates are displayed alongside files at all times. Also included on the disk is a command line utility to handle ARJ files – a format currently in vogue in PC circles.

ST REVIEW COMMENT: "If you look solely at the number of formats handled internally *DC Extract* is unrivalled, but from a usability point of view *ST Zip 2* probably still has the edge. On the other hand, I wouldn't be without either!"

★★★★



DC Extract handles ZIP, LZH, ZOO & ARC files and is an essential purchase for anybody who buys public domain software regularly.



There's far more to DC Extract than the convenience factor. It sports almost all of ST Zip's refinements and comes a very close second in terms of usability.

RECIPE BOX

**GOODMAN INTERNATIONAL • DISK NO: GD.1918 •
£2.75 • MEMORY: 0.5MB • SHAREWARE •
FALCON-COMPATIBLE**

IN BRIEF: Have you ever wondered whether there's a better way of storing recipes than on little cards that get covered in eggs and flour every time you use the kitchen? Of course you have (he lies) and *Recipe Box* is the solution.

At the heart of the system is a custom written database. Each recipe file is broken down into categories (main courses, desserts, beverages and so on) and you can have up to 484 entries per file. Finding the recipe you need is as simple as clicking on the required category and then scanning the entries for something suitable. If the right thing still eludes you, a swift search should turn up what you need.

The program runs happily on a half meg of RAM although constant switching of data in and out of memory makes a hard disk almost essential.

ST REVIEW COMMENT: "*Recipe Box* is relatively unexciting, but it does its job well and definitely looks the part. Wiring up your ST in the kitchen might prove to be the major problem!"

★★★★

* *BeroPress ST 2.60* *
BeroPress ST ist Public Domain.
Der Source-Code in GFA-BASIC ist
gegen 20 DM, Rückenschlag und
Leerdiskette erhältlich bei:

Bernhard Rosenkränzer
Auf der Hard 3
D-5513 Tarnern

Sollten noch Fehler in *BeroPress* sein,
Schicke mir eine Leerdiskette, einen
Rückenschlag und eine Beschreibung
des Fehlers. Dann erhältst Du
eine Version von *BeroPress*, in der
der Fehler verbessert ist.
© 1990/91 by Bero.



Poster Brief Karte Schriftband Kalender Bildeditor
Druckeranp. Exit to GEM Stundenplan

Virtually any type of stationery can be designed with a few keystrokes, but don't expect the quality to be up to commercial standards.

BERO PRESS 2.6

**THE SHAREWARE COMPANY • DISK NO: BY NAME
• £1.75 • MEMORY: 0.5MB • PUBLIC DOMAIN •
FALCON-COMPATIBLE • HI-RES ONLY**

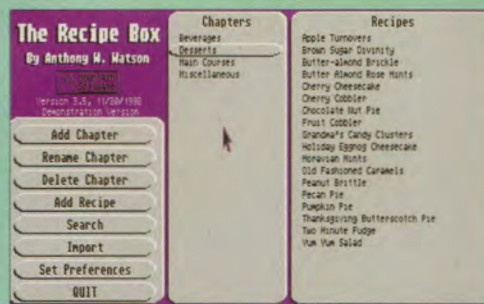
IN BRIEF: *PrintMaster* was in at the very the start of the DTP revolution. It was the first program to allow anyone with a computer to design and print their own stationery without resorting to expensive typesetting. Unfortunately, like so many other packages, *PrintMaster* is no longer available, but the good news is that we now have a public domain equivalent – *Bero Press*.

Just like *PrintMaster* it will let you design your own letter heads, calendars, posters, reports and a whole range of other business knick-knacks. *PrintMaster* graphics are easily added to your creations, or you can design your own with the built-in editor. Unfortunately all prompts are in German, but it's so straightforward to use, this shouldn't cause too many problems. Extra fonts can be bolted on in *Signum* format, and a variety of printers from 9-pin dot matrix to laser are catered for.

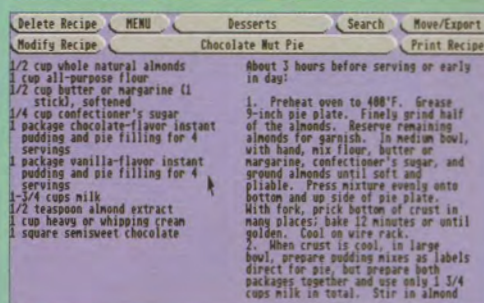
ST REVIEW COMMENT: "*Bero Press* is a nice program although, like *PrintMaster*, it does have limitations. If you're prepared to accept that the quality of output won't be on a par with a DTP package it comes thoroughly recommended."

★★★★

*The built-in graphics library contains a plethora of handy images and even more can be added in standard *PrintMaster* format.*



Recipe Box looks great and it works well, but one question remains – who on earth is going to use it?



All recipes are displayed in a very readable format and can be easily printed out if you prefer a flour free keyboard!

RAMWORLD 2

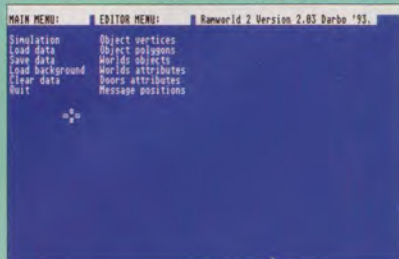
LAPD • DISK NO: M.107 • £1.50 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

IN BRIEF: Judging by the number of 3D Construction Kit creations in the public domain, virtual reality games are something that every ST user would like to write. *Ramworld* is a program that will let you do just that.

The first thing you notice about the program compared to 3DCK is its speed. It's fast enough on the ST, but run it on the Falcon and you will be absolutely gob-smacked – this is the silky smoothest 3D you have ever seen!

Naturally, there is a catch, and in this case it's the way your worlds must be designed. Each object has to be created by hand, entering coordinates you've roughed out on graph paper – get one wrong and it's back to the drawing board. Mind you, the documentation is quite extensive and splitting your designs down into "rooms" makes the task seem less daunting. Once completed, your games can be distributed with the runtime program supplied.

ST REVIEW COMMENT: "It's a lot harder to use than *The 3D Construction Kit*, but the phenomenal speed is well worth the extra programming effort. One thing's for sure – it's one heck of a lot easier than writing your own 3D routines!"



Ramworld 2's interface is a big improvement over version 1, but it still lacks the 3D Construction Kit's refinement.

IKONGRAPHICS CALAMUS FONTS

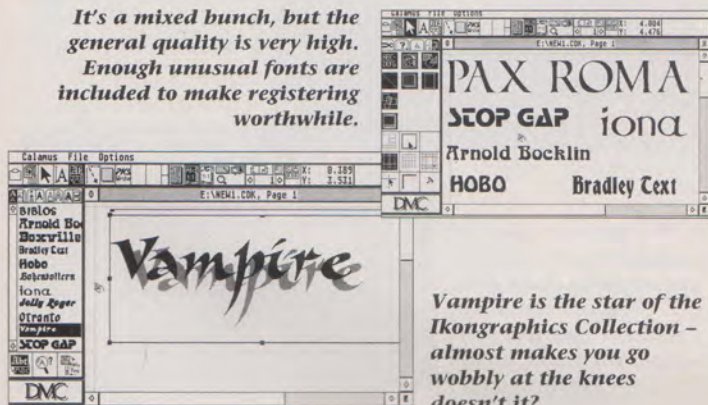
THE ST CLUB • DISK NO: FON.137 • £1.45 • MEMORY: 1MB • SHAREWARE • FALCON-COMPATIBLE • HI-RES ONLY

IN BRIEF: No matter how many fonts you have in your collection there's always room for a few more. This range of Calamus fonts was designed by Dave Robinson using Genus and as a result all are compatible with every version of Calamus, from 1.00 through to S and SL.

On the disk you get a total of nineteen typefaces, most oriented towards a decorative style. Unfortunately some are missing lower case letters, but considering they are meant mainly for display it's not a major headache. One or two unusual fonts, such as Pax Romana which models itself on the stone-cut script used in Roman times, have been thrown in and the entire collection can be registered for £10 which works out at a very reasonable 56p per font.

ST REVIEW COMMENT: "If you're in the market for semi-fancy fonts, this is a good disk. One or two slightly duff faces have crept in as usual, but Vampire and Quo Vadis are just brilliant. It's a shame that some are capitals only."

It's a mixed bunch, but the general quality is very high. Enough unusual fonts are included to make registering worthwhile.



Vampire is the star of the Ikongraphics Collection – almost makes you go wobbly at the knees doesn't it?

TOP TEN UTILITIES

1 RAMWORLD 2 • LAPD • DISK NO: M.107 • £1.50 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE (AND HOW!)

The closest we've come to virtual reality on the ST. This 3D landscape designer may lack the frills and fancies of commercial rivals, but makes up for it in every respect by its blistering speed.

2 THE PALETTE EXTENDER 2 • THE ST CLUB • DISK NO: CMP.09 • £1.45 • MEMORY: 1MB • PUBLIC DOMAIN

Take a peek at some top-quality Targa image files with this superlative Stateside viewer. It's without a doubt the closest you will come to true colour on the ST. One image is included to get you kicked off.

3 DC EXTRACT • GOODMAN INTERNATIONAL • DISK NO: GD.1962 • £2.50 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

A nice little GEM based utility that will happily handle ARC, ZIP, LZH and ZOO archives without the need for any external utilities. Compatibility appears to be superb and the shell comes a very close second to the world-beating *ST Zip*.

4 MASTER BROWSE 2 • GOODMAN INTERNATIONAL • GD.1964 • £2.75 • MEMORY: 1MB • SHAREWARE • FALCON-COMPATIBLE

The Rolls Royce of text viewers featuring bookmarks, line counts, block handling and plenty more – it really is beautifully done. Line by line scrolling is a shade on the slow side, but in all other areas it's nippy enough, and plenty of instructions are included for integration with almost any desktop.

5 ADB DATABASE • GOODMAN INTERNATIONAL • DISK NO: GD.1914 • £2.75 • MEMORY: 0.5MB • PUBLIC DOMAIN • FALCON-COMPATIBLE

A desk accessory database designed primarily to hold addresses. As you'd expect it's fully GEM'ed and can also support the Atari clipboard, which makes it very handy when used in conjunction with a word processor. Files are stored in ASCII format so can easily be edited outside the database if need be.

6 FALCON MOD PLAYER • GOODMAN INTERNATIONAL • DISK NO: GD.1929 • £2.75 • MEMORY: 1MB • PUBLIC DOMAIN • FALCON ONLY

Strangle the internal speaker (*I think he means turn it off... – Ed*) and hook up your machine to the nearest hi-fi for this selection of superb, Falcon-quality sound modules. The player uses almost any soundtracker file format, and is activated by simply dropping a MOD file on its icon!

7 IMAGECOPY COLOUR DEMO • THE ST CLUB • DISK NO: GRA.162 • £1.45 • MEMORY: 0.5MB • BANNERWARE • FALCON-COMPATIBLE

A fully-usable demo of Jeremy Hughes' image grabbing and printing utility. This version, as the name suggests, adds colour printing to its many talents and printers supported include the Deskjet 500 and most flavours of Epson dot matrix.

8 ST DIARY • CALEDONIA PDL • DISK NO: AU.209 • £2.50 • MEMORY: 0.5MB • PUBLIC DOMAIN • FALCON-COMPATIBLE

Yep, it's another diary utility, but this one is more like the real thing than any other you will find. Usage is as simple as clicking where you want to write and it even comes complete with a menu full of useless trivia.

9 IKONGRAPHICS CALAMUS FONTS • THE ST CLUB • DISK NO: FON.137 • £1.45 • MEMORY: 1MB • SHAREWARE • FALCON-COMPATIBLE • HI-RES ONLY

A good range of Calamus display typefaces with one or two real stars. Most include a full set of European characters complete with accents and the entire disk is fully compatible with all versions of Calamus.

10 DESK SWITCH • FLOPPYSHOP • DISK NO: UTL.3097 • £2.50 • MEMORY: 0.5MB • SHAREWARE

One of the nicest features of TOS versions two and above is the ability to load *DESKTOP.INF* files at any time. *Desk Switch* adds this option to any version of TOS and uses less than 1 kilobyte when inactive – a good deal less than either version of Atari's Control Panel.

PD ZONE

FRAC

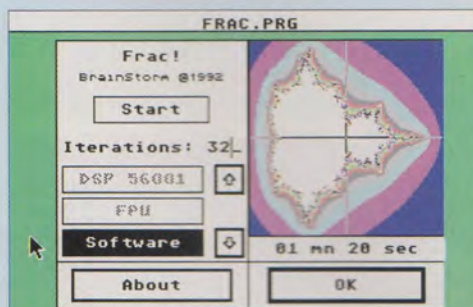
FLOPPYSHOP • DISK NO: UTI.3614 • £2.50 •
MEMORY: 1MB • PUBLIC DOMAIN • FALCON
ENHANCED



IN BRIEF: This mini fractal generator's claim to fame is its use of the Falcon's digital signal processor for calculations. It runs on all STs in all screen modes, however, and as such serves as a good benchmark between machines. A standard ST takes eighty seconds to display a picture; a Falcon using its DSP takes just eight!

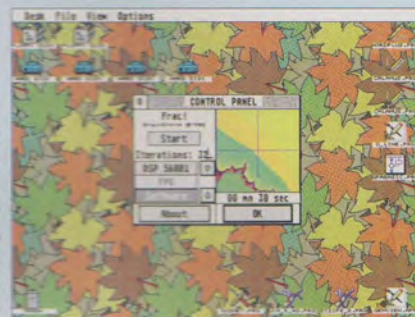
The program uses a GEM dialogue to communicate with the outside world and is happy to run as a standalone or as a CPX in Atari's XControl – ideal for relieving the boredom of a spreadsheet! A maximum of sixteen colours can be used, although a cycling option makes the pictures look quite impressive.

ST REVIEW COMMENT: "As a demo of the Falcon's CPU and DSP, *Frac* is unbeatable, but the interest doesn't go far beyond that and there are far better fractal generators available. The option to load it as a CPX module is a nice touch though."



*If you need any convincing about the power of the Falcon's DSP, look no further – *Frac* slashes generation times from eighty to eight seconds!*

Frac runs as a CPX under Atari's XControl, so a colourful fractal generation is only ever a mouse click away from your most boring application!



TRIP-A-TRON

FLOPPYSHOP • DISK NO: ART.3487C • £2.50 •
MEMORY: 1MB RECOMMENDED • SHAREWARE

IN BRIEF: When it comes to psychedelia, you can expect Jeff Minter to be first on the case. Even his games are colourful enough to make your eyes sting, so when he puts his mind to colour alone, you can expect something pretty special.

Trip-a-Tron is what's technically termed a "light synthesizer", which basically means you wiggle the mouse and pretty patterns appear on screen. Unlike earlier efforts, such as *Colourspace*, there's no shortage of options to play with – half the screen is filled by a control panel just bursting with settings and controls for your amusement.

The shareware release is not 100% STE compatible – although it is useable – but registration solves the problem. Also included in the registered price is a comprehensive manual, which you really need to make the most of the program.

ST REVIEW COMMENT: "*Trip-a-Tron* is one of those immensely addictive programs, but you can't for the life of you explain why. It certainly explores colour further than any other ST program, but it can be a bit daunting at first."



*Nobody can accuse *Trip-a-Tron* of doing things in half-measures, but you can't help wondering whether a few pretty patterns are really worth all the effort.*

KOZMIC 2+

THE ST CLUB • DISK NO: DRG.45 • £1.45 •
MEMORY: 1MB • SHAREWARE

IN BRIEF: *Kozmic* is to patterns what *Trip-a-Tron* is to light. It places you in control of a huge range of shape-generation tools, all of which can be controlled by simple mouse clicks. The program employs a *Degas* style right-button options screen complete with mini-icons for each effect.

As each new pattern is created it is overlayed on the last, giving an almost infinite number of picture variations, and for a STOS program it's surprisingly nippy. Once happy with the picture, your creations can be saved to disk as a *Degas* file for use in a slideshow. Several good colour schemes are built-in, but the fun really begins when you start "colour-cycling". This adds a totally new aspect to any drawing and is utterly hypnotic!

ST REVIEW COMMENT: "*Kozmic* is art for everyone – you needn't be able to draw at all! Unlike *Trip-a-Tron* it's very easy to use and you can be up and running in seconds without even looking at the on-disk manual. Just the job to while away a few rainy summer evenings."



If only all things in life were this simple. A mini-icon shows exactly what each looks like and it takes absolutely no experience to produce some truly stunning pictures.

*When it comes to colour, *Kozmic 2* is the undisputed champion. If you think this picture is good, wait until you see the colour cycling!*



TUMBLEVANE PDL

6, West Road, Emsworth, Hampshire, PO10 7JT
Telephone: Emsworth (0243) 370600

SUMMER HOLIDAY SPECIAL

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GM 26: Flight Simulator.
GM 27: Monopoly + 3 more.
GM 42: Penguins. Reviewed issue 12.
GM 69: Ozone. An award winning platform game.
GM 78: Violence. A Mega shoot-em-up.
GM 82: Smash Hit Tennis. Reviewed issue 10.
GM 84: Cybersnake + 2 more.
GM 86: Plop + 4 more. Reviewed issue 15.
GM 87: Bar Games. Pool, Poker, Darts, etc.
GM 88: Hunt for Grey November. Good sub hunt game.
GM 95: Arthur of the Britons. A great RPG (1 Meg).
GM 97: Fatemaster. See review issue 14.
GM 100: International Cricket. Graphic game of cricket.
GM 101: Psycho Pig 2 (2 disks).
GM 104: Grey Matter & Splat. Reviewed issue 15.
GM 108: A cross between a Trivia & Fruit pub machine.
GM 111: The Glass Buttock of Tharg. Reviewed issue 13.
GM 112: Rebound. A new D. Cobbleclik classic.
GM 113: Mrs Munchie & Galaxians. Great Pac Cloner.

SUMMER HOLIDAY PACK (SHP1) Price £5, until next issue.

GM 31: Spectral Sorcery + 4 more. GM 82: As above.
GM 69: As above. GM 111: As above.
GM 80: Companion 1. Thinking man's shoot 'em up.

ADVENTURES

ADV 28: A Night on the Town.
ADV 31: Susan. Adult adventure.
ADV 35: Deena. Adult adventure.
ADV 40: Grandad and the Quest. The best.
ADV 50: Black Dawn. A graphic adventure.
ADV 51: TROS. A new role playing game.

SUMMER HOLIDAY PACK (SHP2) Holiday price £5, until next issue.

ADV 40: As above. ADV 50: As above.
ADV 33: Lottery. ADV 18: Elf
ADV 33: House of the O's

UTILITIES

UTA 28: Award Maker. Create certificates.
UTA 34: Database Master 1.
UTA 35: Spectrum & ZX81 Emulator.
UTA 36: Data Editor (1 Meg). Data into graphs.
UTA 38: Five Databases. One of them will do it!
UTA 40: Calamus support disk.
UTA 46: Inventory Pro.
UTA 48: Sagrotan. Virus killer.
MISC 1: Generation Gap. Family tree.
MISC 2: Poolwise V3.8. Try for a fortune.

SUMMER HOLIDAY PACK (SHP3) Holiday price £5, until next issue.

UTA 28: As above. UTA 34: As above.
UTA 40: As above. UTA 37: DB Construction
UTA 5: Supercard & Chef DB & TLC addressbook

MUSIC & MIDI

MUM 18: 1632 Voices for Yamaha DX/TX.
MUM 19: Tri-sound sequencer.
MUM 24: Alchime Jr. Multi-tasking sequencer.
MUM 45: PSS Utilities (disks for 680/780/790). Yamaha
SY22 Editor (1 meg). Ask for by Name Riff,
Backing track creator (1 meg). By Name
Tracker modules available, see catalogue disk.

DTP & WP

WPD 1: ST Writer Elite & Spell Checker.
WPD 3: Typing Tutor.
WPD 8 to 10: Calamus fonts.
WPD 14: Calamus Manual. Handy tips.
WPD 15: 1st Word Utilities.
WPD 19: Printing Press (1Meg).

SUMMER HOLIDAY PACK (SHP4) Holiday price £4, until next issue.

WPD 1: As above. WPD 2: Easy Text + demo
WPD 19: As above. WPD 12: Opus, Spreadsheet

ART & GRAPHICS

AAG 1: Palette Master.
AAG 5: Crackart. WITH ENGLISH DOCS (1 Meg).
AAG 8: Kozmic 2. Animated colour/shapes.
AAG 21: Picture Converters.
AAG 22: Public Painter (Mono).
AAG 26: Picture Works.
AAG 29: Paintpot.

EDUCATIONAL

EAC 1: Maths Test.
EAC 7: About the House.
EAC 11: Geography test.
EAC 18: The world. Where is that place.
EAC 26: Zoomaker. What is that animal.
EAC 29: Workout revision aid.
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LICENCEWARE

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IN BRIEF: The Degas "bee" and Neochrome "rose" probably did more to sell the ST than any Atari advertising campaign, and no doubt the same is going to be said about these slideshows in years to come.

The slides are all Targa 16 million colour pictures which are "overscanned", or stretched to remove the border around the screen. The quality is near as dammit photographic and the subjects range from raytraced scenes to the now classic "baby amongst cuddly toys" and "glass man" used by Atari in their ad campaign.

Due to the size of the files you only get between three and four slides per disk and they take aeons to load, but the zoom effect used by the display program is very nice. A haunting piece of panpipe music accompanies the show and is, to be honest, worth the price of the disks alone!

ST REVIEW COMMENT: "No doubt we will look back on these disks with supreme indifference in a year's time, but right now they're damned impressive and the soundtrack is out of this world!"

★★★★



Sorry, couldn't resist using this one. If you think the picture quality is good, you ought to hear the soundtrack!



As nice as they look, Targa files are enormous, so you can expect a maximum of four slides per disk, even when compressed!

POV RAYTRACE 030

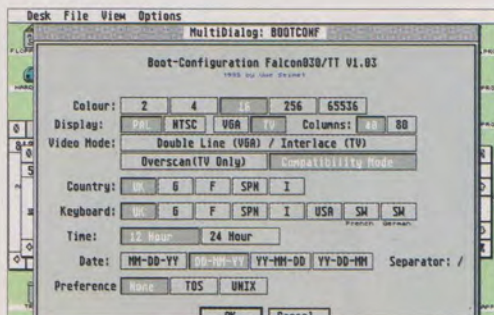
FLOPPYSHOP • DISK NO: ART.3615 & 3616 • £5
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IN BRIEF: If there's any area that highlights the speed deficiencies of the ST's 68000 CPU, it's raytracing. A complex 24-bit scene can take twelve hours or more to render on a standard machine – or at least, it used to. The Falcon version of the *POV Raytracer* can slice these times down to a far more respectable two to three hours.

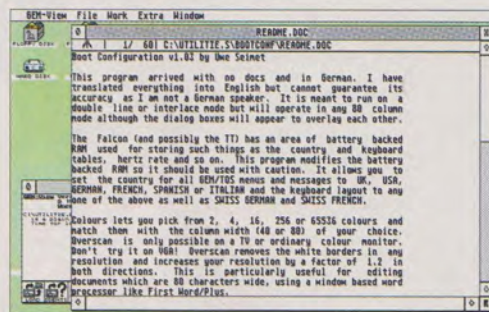
Once again a user interface is sadly missing, but all is not lost in this case because you get a suite of utilities to convert files from popular ST, PC and Amiga CAD packages into the required DKB format. The raytracer itself must be launched from a command line interface, which makes *Gemini* a useful addition to your shopping list and although it's theoretically possible to work from floppies, a hard disk is by far the best option.

ST REVIEW COMMENT: "It's still no winner in terms of ease-of-use, but the increased speed puts *POV* in a better position. The results are far superior to QRT, its main competitor."

★★★★



Ah, the advances of technology! You can now boot your Falcon in French, German and a host of other languages – handy eh?



BOOT CONFIGURE

FLOPPYSHOP • DISK NO: UTL.3614 • MEMORY:
1MB • £2.50 • PUBLIC DOMAIN • FALCON ONLY

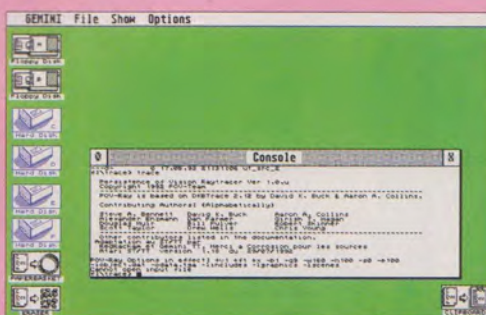
IN BRIEF: Including an overscan capability in the Falcon was definitely one of Atari's better ideas, but less wise was the decision to give the user absolutely no way to switch it on before you reach the desktop – and then only by fiddling with the NEWDESK.INF file!

Boot Configure aims to solve this problem and many more by putting you in complete control of the Falcon's NVRAM settings – the bits it doesn't forget when you power down. This includes the language settings, video mode, overscan setting and date format. There's also a mystery option which appears to allow you to connect a UNIX formatted hard drive to the SCSI II port, but that's only a guess!

All options are chosen from a comfy GEM shell which comes complete with TOS 4.0 3D buttons and is fully compatible with *MultiTOS*. Be warned, all settings affect your Falcon even after the power is switched off, so be sure to make a note of the default settings before you start to experiment!

ST REVIEW COMMENT: "At last – an end to booting in ST low resolution! It's a shame that some of the video settings don't make it as far as the desktop, but this is a good purchase all the same."

★★★★



*Ease of use is not one of *POV Raytracer's* strong points, but you can import files from several popular modelling programs on the ST, PC and Amiga.*

*Here's one we prepared earlier! But seriously, this pic shows you just what the *POV* routines are really capable of!*



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No. 4 in December's STR PD Game Top 10
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GAM-22 AstroDodge/Subhunt + 10 more 'S'
GAM-28 Question of Snooker/Frogger + 1 'D'
GAM-34 X-word/Bugs/Warrior + 2 more 'D'
GAM-36 Klatrix/Entombed/Mr Dice + 2 'D'
GAM-38 Caves of Rigel/Froggy/Harris 'D'
GAM-45 Die Alien Blob (very addictive) 'S'
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- STE-06 STE Presentations (5 demo's) 'D'
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GENERAL

- GEN-02 ST-Tour (Specially for beginners) 'S'
- GEN-04 Your 2nd ST Manual (A MUST) 'S'
All the little things (and some not so little) that our friends at ATARI should have told you but didn't. This is the manual that should have been supplied with your computer (at least in our humble opinion).
- GEN-05 Adventure Writer/Skymap + 4 more 'D'
- GEN-06 Archive Suite (back-up in less space) 'S'
- GEN-09 ZX-81 Emulator + lots of programs 'D'
Back to those halcyon days of the ZX-81 Emulate (if you must) this forgotten unit
- GEN-12 Formfinder 2.1 (find a winner?) 'S'
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- GEN-16 60 assorted samples (SPL Format) 'D'
- GEN-20 Firstbase DB+7 more good programs 'D'
- GEN-22 E-Plan (Electronic Circuit Designer) 'S'
- GEN-24 Joke Database (Laugh with us!) 'D'
- GEN-25 Quartet Samples II (730k of samples) 'D'
- GEN-30 Film File Enquiry 'D'
With this unusual Database you can keep track of all your favourite Films, Actors, Directors etc. Lots of classic films inc
- GEN-31 Data File (TV Titrer/Asst. Chef/Party) 'D'
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- DEM-97 KLF Demo (House hit + dancers) 'D'
- DEM-98 Star Wars Rap 'D'
- DEM-101 Spinning Dolls + Shiny Bubbles 'D'
This one takes a while to load but the end result is more than worth the wait
- DEM-84 Things Not to Do (EXCELLENT) 'D'
Very Humorous, animated account of things not to do and the result if you do!
- DEM-67 Fish & Chips (GET THIS ONE) 'D'
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- DEM-46 European Demo's (2 DISK SET £2.75) 'D'
- DEM-44 Skid Row (2 DISK SET £2.75) 'D'
- DEM-43 Punish Your Machine(2 DISK SET £2.75) 'D'
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- DEM-75 Dark Side of the Spoon 'D'
- DEM-82 Wasted Years 'D'
- DEM-70 Lifes a Bitch 'D'
- DEM-54 Gateway to Hexland 'D'
- DEM-48 Summoning the Spawn 'D'
- DEM-100 The Run (animation from T. Richter) 'D'
This one is so much better than the original AMIGA version
- DEM-55 Art Machine 'D'
Sit back and enjoy this stunning artwork

ART & GRAPHICS

- GRA-26 Crackart 'D'
No.1 in STR's PD Top Ten! This prog will process your pics in ways you will not believe: Curve, Twist, Wave, Tube, Palette edit, Dither, Animation and far more. Uses Degas, Neo & Tny format
- GRA-24 Paintlux (full feature paint/art prog) 'D'
- GRA-20 Kozmic (needs 1 Meg) 'D'
Create fantastic, colourful psychedelic patterns on your ST & save to disk
- GRA-17 PAD (Mono Art program) 'D'
Absolutely the best Mono art package we've seen to date, many commercial features and the ability to hold many screens in memory (1 Meg min)
- GRA-27 Mono Pictures (43 high-res pics) 'D'
- GRA-10 Colourburst II (+5 other programs) 'S'
A very good little Art/Paint prog also on the disk: MAC to Degas converter Fine Line: art prog using Bezier/Spline
- GRA-11 A.I.M. (Atari Image Processor) 'D'
Exactly what it says, if you can create an image on your Atari then you can process, add or alter it with A.I.M.
- GRA-14 Ani-ST 'S'
Excellent Art & Animation package that started life as a commercial art program costing £89.95!!
- GRA-31 Kid Publisher & Master Doodle 'D'
A DTP package + Art/Paint program both good starting points for the kids
- GRA-32 Colourspace 'S'
This is another program that started life as a commercial package now released as Shareware by Jeff Minter. Create your own colour & light show. Turn up the music, sit back and be amazed
- GRA-33 Sprite Works 'D'
Art Prog geared towards creation of Sprites for use in your own programs
- GRA-28 Hi-res Art 'D'
4 programs & pictures for Mono users
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- MIDI-17 Recording Studio Utilities 'S'
Keep track of your tracks with these exceptionally good Studio Utilities
- MIDI-12 Henry Cosh Sequencer 'S'
- MIDI-14 Name That Tune (111 midi files) 'S'
- MIDI-01 PSS special (just for PSS k'boards) 'D'
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- MIDI-05 to 08 Each disk has 40 SNG files 'S'
- MIDI-10 CZ & DX editors & librarians 'S'
- MIDI-11 Picture show with 10 midi songs 'S'
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- MIDI-16 Sound Shifter... Yamaha PSS editor 'S'
- MIDI-18 DX & FB01 editor & librarian 'S'
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Working Demos of these two great commercial MIDI packages
- MIDI-22 Super Conductor sequencer + utils 'D'
- MIDI-09 32 Track Sequencer + utils 'S'

COMMS

- COM-02 Galactic Empire... Get on-line game... You'll need two ST's & null modem cable 'S'
- COM-03 Vanterm 4.0 (best PD comms prog) 'S'
Still the best PD TERM program!!
- COM-04 Unterm (Excellent terminal prog) 'D'
- COM-07 Freeze Dried Terminal 'D'
- COM-08 View D/L files when off-line + 4 'D'
- COM-05 D-Term with Z-modem module 'S'
- COM-06 Mo-Term Elite (for buffs) 'S'



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PD ZONE

HEAT AND SERVE C

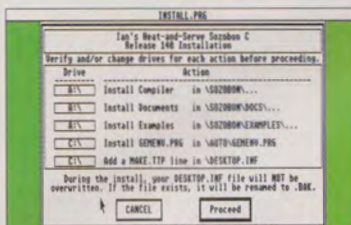
**ATARI ST
BUDGET BUY**
FLOPPYSHOP • DISK NO: LAN.3248 • £2.50
• MEMORY: 1MB • PUBLIC DOMAIN • FALCON-COMPATIBLE

IN BRIEF: Public domain C compilers are traditionally the most difficult, awkward to use software on the entire earth. As the name implies, *Heat And Serve* aims to put an end to this malicious, but perfectly true, tradition.

The compiler is based on the popular *Sozobon* ("no bozos" backwards if you're in the mood for trivia) routines, but it's been reprogrammed to speak English rather than the obscure technobabble it used to come up with. Programs can also be compiled and linked in one sweep by simply double clicking on a UN*X style "make" program from the desktop.

A beautiful GEM installation takes the grind out of getting your paths right – always a problem with *Sozobon* – and the libraries have been beefed up to include all GEM and AES functions. Simply add your favourite text editor to taste!

ST REVIEW COMMENT: "It's still not the ideal introduction to C, but as PD compilers go, *Heat And Serve* is a revelation. The GEM bindings in particular, are better than most commercial offerings, sporting "flying" dialogues and pop-up menus on any version of TOS!"



Heat and Serve C is devilishly easy to set up thanks to an excellent GEM driven installation program and you no longer need a command line interpreter to use the compiler.

ST FIX

GOODMAN ENTERPRISES • DISK NO: BY NAME • £2.75 • MEMORY: 0.5MB • EXCLUSIVWARE • FALCON-COMPATIBLE

IN BRIEF: Greeting the STOS update every time Atari so much as think about changing TOS has become something of a tradition in public domain circles. Goodman's latest updater, in common with all its predecessors, will take any STOS program (compiled or otherwise) and modify it to be compatible with TOS versions above 2.06.

Of course there are exceptions. Programs which use extensions seem to cause the most problems, but generally you can expect around a 75% success rate. The second problem is not with STOS at all, but with the fact that most programmers crunch their games and obviously the updater won't talk to packed files. *Multi-Depacker* is included to help out in this department, but even it can't deal with every single packer in circulation.

ST REVIEW COMMENT: "It's not guaranteed to work on every piece of software you throw at it but £2.75 is a bargain if it gives you access to even three quarters of the huge amount of public domain written in STOS."



The ST Fix patching process only takes a matter of seconds, but backing up your collection before you try it can take some time.

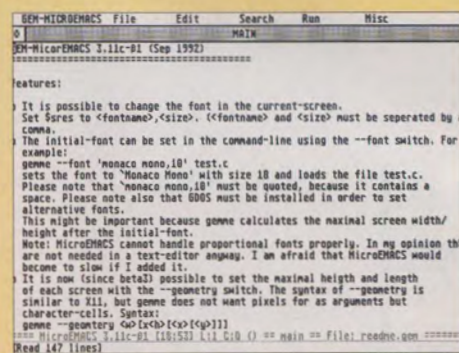
GEM MICROEMACS

FLOPPYSHOP • DISK NO: WRD.3726 • £2.50 • MEMORY: 0.5MB • PUBLIC DOMAIN • FALCON-COMPATIBLE

IN BRIEF: *MicroEmacs* has been the touchstone for all programmers' editors since time began. It has earned the reputation of being supremely powerful, but at the unfortunate cost of ease-of-use. The main advantage of the package, as opposed to any other editor, is the powerful macro language which can be programmed to perform virtually any task.

The GEM version is a new idea aimed at lifting the Emacs from the primordial slime of a command line interface into the GUI age – and not before time. It almost works. All options are now easily accessible from a menu which saves you remembering hundreds of keystrokes (although they're still there if you need them), but comforts such as a simple file selector are still painfully missing.

ST REVIEW COMMENT: "It's fast and it's powerful, but *GEM Emacs* is still a pain to use if you're not used to it. It's certainly an improvement over the command line version though, and as a programmer's editor there's nothing to touch it."



It may look pretty, but underneath the the shell Emacs is still as frightening to use as ever. My kingdom for a file selector!

OTTO'S RESOURCE CONTRUCTION SET

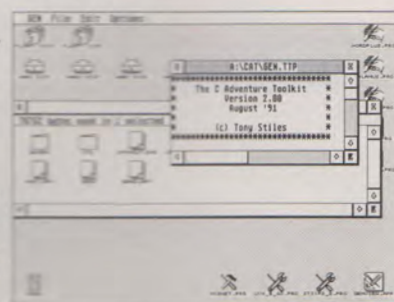
THE ST CLUB • DISK NO: LAN.140 • £1.45 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE
**ATARI ST
BUDGET BUY**

IN BRIEF: A good GEM resource editor is essential for any application programmer because without one, all dialogue boxes, menus and alerts would have to be laboriously constructed by hand! Atari's *RCS2* and *WERCS* have until recently been the only options available and while useable, both have their quirks. *Otto's Resource Construction Set*, or *ORCS*, is a German program that will put an end to such problems.

All editing takes place from within a window – paving the way for multiple file editing – and unlike *RCS*, objects can be accurately positioned by simply typing in the coordinates. Object trees can be displayed as either text or icons and as you move the mouse over the editing window, the object number appears in the title bar – it's touches like this that make the competition look positively archaic by comparison! Output for assembly, basic, C, and most other languages is handled with ease.

ST REVIEW COMMENT: "ORCS is not the easiest program on earth to use, but it's far more flexible and gives you greater control over your resource files than either *WERCS* or *RCS2*. Quite simply the best – multiple file editing at last!"

Otto's Resource Construction Set combines the best aspects of Wercs & RCS2 and adds several new tricks of its own.



THE C ADVENTURE TOOLKIT

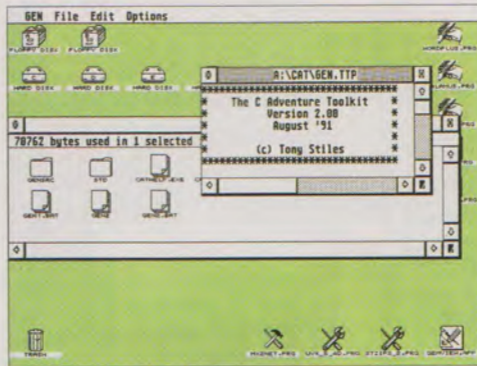
THE SHAREWARE COMPANY • DISK NO: SLAN.042 & SLAN.059 • £3.50 • MEMORY: 1MB • SHAREWARE • FALCON-COMPATIBLE

IN BRIEF: *The C Adventure Toolkit* is a very high level, structured language designed to aid in the creation of text adventures. The output is C source code which can be compiled with any of the popular PD variations (*Heat And Serve* is ideal). The only other thing that's needed is a good text editor and perhaps a command line interface to make dealing with the generation program itself a little easier.

ST and PC versions of the compiler are provided on this disk and both are fully compatible at source level, meaning adventures are easily transferred between machines. The huge amount of commented source code included forms a nice introduction to the new language, and an example of a complete game written with CAT can be found on TSC's SGAM.104.

ST REVIEW COMMENT: "CAT is a nice tool, but you can't help wondering how many people actually play text adventures these days. On the other hand, the language itself is very easy to pick up and with knowledge of C it should be fairly easy to plug some graphics in there."

□□□



It's perfectly possible to run The C Adventure Toolkit from the desktop, although a command line interface is by far the best bet.

GRAPHICS FORMATS 1

THE ST CLUB • DISK NO: GRA.160 • £1.45 • MEMORY: 0.5MB • PUBLIC DOMAIN • FALCON-COMPATIBLE

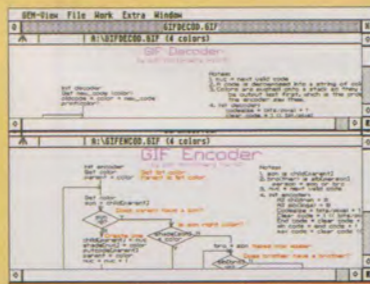
IN BRIEF: With the ST pushing further and further into the professional DTP market, the old *Degas* picture standard is looking increasingly antiquated. The problem for most programmers is not coding the routines themselves but finding information on the various file formats.

This disk contains complete details on the structure of GIF (both 87 and 89a), TIFF and the emerging JPEG standard. Source-code is included for the JPEG and GIF formats, although the latter is in Pascal, which could prove a problem on the ST. Quality-wise the documentation is quite good. Two of the files were written by the designers of the standards themselves so accuracy is guaranteed, although be warned – working with graphic file formats is a one-way ticket to the funny farm!

ST REVIEW COMMENT: "Graphic format information is gold dust and this is a proverbial mine. If you are thinking of experimenting with TIFF, Microsoft's own documentation is probably slightly better, but for GIF and JPEG, this is just the trick."

□□□□

Graphics Formats 1 contains detailed information on GIF, TIFF, and JPEG files. Flow charts are included to give you the overall structure of a working encoder.



TOP TEN PROGRAMMERS' TOOLS

1 HEAT AND SERVE C • FLOPPYSHOP • DISK NO: LAN.3248 • £2.50 • MEMORY: 1MB • PUBLIC DOMAIN • FALCON-COMPATIBLE

The definitive public domain C compiler package. The language follows the original Kernighan & Ritchie specification closely, with a few ANSI niceties thrown in for good measure.

2 OTTO'S RESOURCE CONSTRUCTION SET • THE ST CLUB • DISK NO: LAN.140 • £1.45 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

Whether it be translating German PD or creating an interface for your own mega package, *ORCS* is the resource editor you need. It knocks the spots off anything commercial and was written with the help of *Heat And Serve's* GEM bindings!

3 TURBO ASSEMBLER • CALEDONIA PDL • DISK NO: LAN.9 • £2.50 • MEMORY: 1MB RECOMMENDED • SHAREWARE

As the name suggests, this assembler's main attraction is speed – it kills *Devpac* stone dead (and HiSoft's baby is certainly no slouch!). The editor uses a pseudo-GEM interface. Documentation is scanty, so you'll need to know what you're doing to get the best out of it.

4 GRAPHICS FORMATS • THE ST CLUB • DISK NO: GRA.160 • £1.45 • MEMORY: 0.5MB • PUBLIC DOMAIN • FALCON-COMPATIBLE

Check out this disk crammed to the brim with details of most complicated graphic formats – GIF, TIFF and the mind-blowing JPEG! Example source code included.

5 ALICE • WARPZONE PDL • DISK NO: BUS.27 • £1.50 • MEMORY: 0.5MB • PUBLIC DOMAIN • FALCON-COMPATIBLE

A multi-window C editor which may not be the fastest around, but certainly makes up for it in terms of usability. All the usual block operations are here, and up to ten source files can be held in memory. It's not possible to call your compiler from within the program, but *Alice* is *MultiTOS* savvy.

6 GEM MICROEMACS • FLOPPYSHOP • DISK NO: WRD.3726 • £2.50 • MEMORY: 0.5MB • PUBLIC DOMAIN • FALCON-COMPATIBLE

An extremely powerful programmer's editor, but the unfortunate price you pay for flexibility is ease of use. This version is far better than the command line variant however and the macro language has yet to be beaten.

7 GFA EXPERT • CALEDONIA PDL • DISK NO: LAN.10 • £2.50 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

This disk should be a part of every GFA programmer's collection. It contains detailed information on most of the language's many instructions and comes complete with a library of useful procedures.

8 ST FIX • GOODMAN ENTERPRISES • DISK NO: BY NAME • £2.75 • MEMORY: 0.5MB • EXCLUSIVWARE • FALCON-COMPATIBLE

If there are any Falcon or TT owners out there who want to play *STOS* games on their machine, this is the disk for you. Unfortunately programs that use "extensions" can cause problems, meaning the better the game, the less chance the patch has of working. Still, that's life!

9 GEM C TUTORIALS • THE SHAREWARE COMPANY • DISK NO: SLAN.12 • £1.75 • MEMORY: 0.5MB • PUBLIC DOMAIN • FALCON-COMPATIBLE

This set of tutorials was written by Tim Oren, a member of the programming team at Digital Research (the company responsible for GEM). The information you get is a little old, but brutally honest about some of GEM's undocumented "features" and far more accurate than most textbooks. Recommended.

10 THE C ADVENTURE TOOLKIT • THE SHAREWARE COMPANY • DISK NO: SLAN.042 & SLAN.059 • £3.50 • MEMORY: 1MB • SHAREWARE • FALCON-COMPATIBLE

Everything you need to write your own text adventures for the ST and PC on two disks. Despite the lack of graphics, the language is powerful and relatively easy to get to grips with if you've got a little programming experience.

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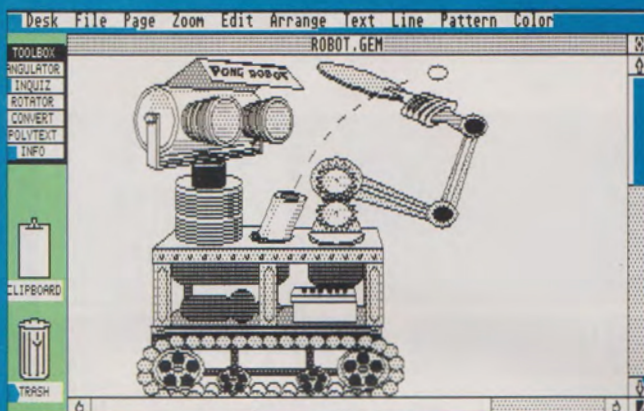
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- ☐ TOOLKIT £1.75
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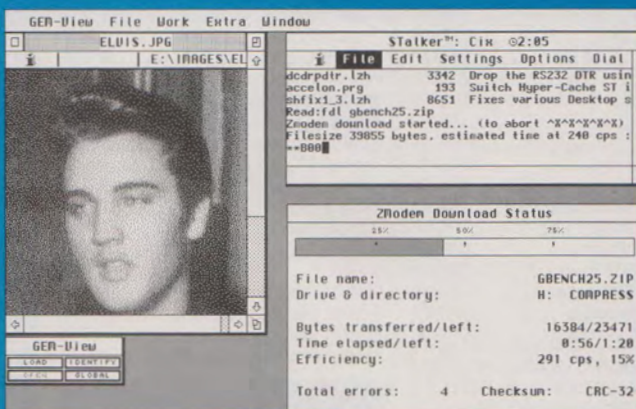
ST BUYER



Now's the time to add colour to your BASIC programs...



One ping-pong player you wouldn't want to play against...



Learn how to set up Stalker in Comms Coaching...

Tutorials, points of view, expert replies to your questions ... that's what ST Buyer is all about.

There's an absolute plethora of cheap graphics utilities for the ST, from colour viewing programs to converters and screen grabbers. Andrew Wright surveys all before him in the highly useful In At The Cheap End series, starting on page 81.

Judging from your response, a lot of you use a modem and comms program. Has Comms Coaching covered your particular piece of software yet? Graeme Rutt gives you the benefit of his knowledge with a step-by-step guide to STalker this month – see page 84.

Keeping with the colour theme of this issue, Ofir Gal takes you through the creation of a rather special program using HiSoft BASIC. Haven't got a colour monitor? Not to worry – the programming works just as well in monochrome as you'll see on page 87.

The final instalment in our Easy Draw tutorial sees Keith Berry designing a robot against whom you would not want to play table tennis! Follow his pictorial step-by-step on pages 90 and 91.

Do you know if you can get teletext on an ST? No? Neither did we... but we knew a man who did! Our band of merry experts answer your questions on page 92. Your letters continue to flood in – see who's won £25 for letter of the month this issue.

And then there's the Blitter End...

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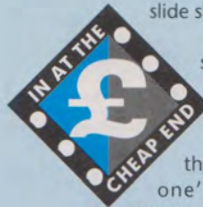
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ARTFUL DODGING...

Andrew Wright
penny pinches
again with this
month's look at
cheap 'n' cheerful
graphics.



The ST's built-in hardware makes it one of the most powerful computers for creating and manipulating graphics and drawings, a situation that has always been reflected in the high quality of available PD and shareware programs. If you're anything like me, you'll have disk after disk crammed with graphics utilities, ranging from fully-fledged drawing or painting programs to image converters, screen grabbers and slide shows.

Most of them, it has to be said, are old hat now though, especially as there are half a dozen or so really powerful utilities that deserve to be in everyone's collection. Many, like *Imagecopy*, double up as picture viewers, converters and screen grabbers in any resolution, while others, such as *GEMView*, excel at reading all kinds of obscure file formats. Some, like *Speed of Light*, can even display more colours on screen than Atari ever dreamed of!

The ST has another peculiarity – it has two distinct graphics modes, colour and mono. In ST low or medium resolutions, using a TV or colour monitor, you can paint and view pictures in colour, but in hi-res mode, with a mono monitor, you're restricted to black and white. Both modes are useful. Colours are wonderful for painting, digitising and viewing but monochrome is decidedly better for scanning, vector drawing and DTP. The higher resolution (640 by 400 pixels) allows you to see more of the picture at once and, as most DTP is output on mono printers, the screen display matches the printer output much more closely.

COLOUR CLASH

Some budget programs stand head and shoulders above the rest as far as I'm concerned. One is a shareware product from France called *Synthy Art*, that is similar to *Neochrome*, with an on-screen toolbox covering the lower half of the screen. It has a number of fascinating features including frame by frame animation and some entertaining gradient fills. It works on all 1 MB STs in low resolution.

All the usual paint tools are present including a unique airbrush that lets you use any or all of the ST's 16 colours in a random spread of coloured pixels. Multi-coloured brushes can also be defined using a 16 by 16 pixel grid and again any of the colours in the palette. Lines and other shapes can have different colour attributes from start to finish too. The autodegrade feature fills solid areas with a blend of all 16 colours. It's very slow but the effects can be stunning.

The main problem with *Synthy* is that it's very hard to get to grips with as the documentation isn't anywhere near up to scratch. Some of the more complex tools like block manipulation and autodegrade take a lot of experimentation to get right.

Another superb bit of



Synthy's autodegrade feature adds gradient fills to any solid area.



Synthy's neat interface.

programming is the German program *Crackart*, which earned five stars in our Issue 14 roundup. It requires 1 MB of memory or more to run and the main screen is a blaze of coloured icons that can appear rather daunting at first.

Manipulation facilities are its strong point although it has a full set of configurable paint tools such as spray, point, line, K-Line and a number of predrawn objects such as circles and boxes. It also has a wide range of fonts in its own peculiar format that can really enhance your work.

Existing images can be imported in various low resolution formats and given some really twisted special effects like bulging, curling, and skewing. You can also add perspective in either plane or even turn your image into a tube!

The program now has an English manual and for those willing to persevere, the program is well worth the time and effort involved in getting to know it



Crackart is undoubtedly a must for every ST graphics enthusiast.

A ROOM WITH A VIEW

If you're not into creating your own pictures but you can't resist looking at other people's work, there are several excellent utilities that let you load almost any colour image and view it on your screen, whether it's a converted PhotoCD file or the result of someone else's late nights with a paint package.

The problem is that an ST can display a maximum of 16 in low resolution while most decent images have 256 colours or even more. To get around the problem the best viewers use techniques like palette switching and software interlacing to display many more colours than the ST was designed to display – and the effects have to be seen to be believed.

The quickest and the best displayer for ordinary ST owners is probably the *Speed of Light* GIF viewer, given away on last month's cover disk. It lets you load and display GIF format files and provides a menu screen with several different parameters to play with. You can adjust colour contrast, flicker or averaging and reduction and choose between palette and frequency display modes.

A better bet for STE owners is *Photochrome* which comes in two versions, one for half megabyte machines and another for those with more RAM. Files in RAW, IFF, VidiST, Targa and GIF formats can be loaded and viewed in one of six screen modes. The first two modes display the images as Spectrum files with 512 colours on an ST and 4096 on an STE while the middle two modes are enhanced Spectrum formats with better conversion. The two final modes are Superham, an interlaced mode displaying 4096 colours on a standard ST/STE, and Photochrome which offers an astounding 19,200 colours on an STE.



GIFs at the speed of light – stunning results in no time.

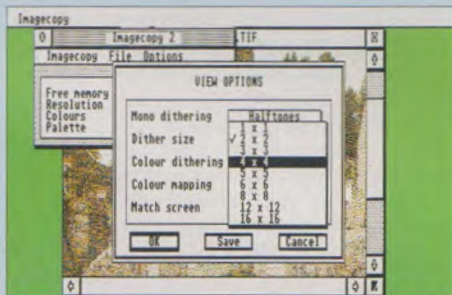
ONE GOOD FORMAT DESERVES ANOTHER

Once upon a time in the ST world, the only graphics conversions we needed were IMG into Degas and vice versa. Now that the ST interacts more and more with other computers, especially in DTP, there is a growing demand for utilities to convert graphics from one format into another.

Few commercial programs bother with such trivia and many of them are at least partly responsible for the wide range of weird and wonderful file formats. *TruePaint* is the first to deal with it properly but there are some good shareware alternatives, many of which double as picture viewers too.

Imagecopy Colour supports IMG, Degas, NEO, Tiny and Art Director format graphics files and can be installed either as a desk accessory or a program in any resolution. Colour images are neatly dithered on monochrome monitors and up to four images can be displayed at once in moveable GEM windows. It also has drivers for most of the more common colour and monochrome printers including HP Deskjets and Laserjets, Bubblejets, Epson 9 and 24 pin compatibles and NEC 24 pin printers.

Imagecopy 2 goes several steps further with support for Targa, extended IMG (colour), IFF, PCX, GIF, BMP, TIFF (including the odd *Didot/Retouche* type TIC/TIH files) and Spectrum formats too. It also offers excellent halftoning facilities and up to six images can be displayed at once or be saved in TIFF, Targa, IMG or Degas formats.



Imagecopy 2 has the edge in terms of output and halftone features.



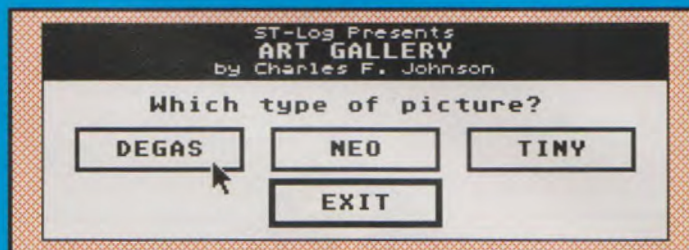
Photochrome can import more formats and looks slightly better on STEs.

Metaview lets you look at several GEM files at once and works well with *Easy Draw 2!*



If you're making the most of *Easy Draw* from Issue 14's cover disk, why not get hold of *Metaview*, a desk accessory that lets you view several vector format GEM files at once, each in its own GEM window.

Finally, an excellent desk accessory to have at hand is *Art Gallery*. It takes up very little RAM and can load and display files in Degas, Neo or Tiny formats, although they have to match the current screen resolution. Anyone who uses or stores a lot of Degas files will find this little utility well worth the cost of the disk.



The *Art Gallery* desk accessory offers rapid viewing of Degas, Neo and Tiny files.

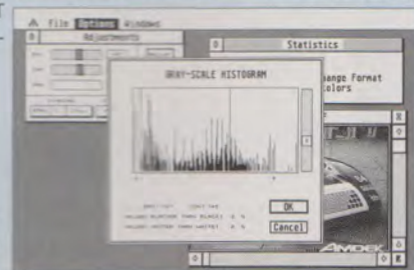
A slightly different approach is taken by *GEMView*, now up to version 2.24. It is a comprehensive program that lets you view and convert images in several ways but as the documents are all in German, some of the facilities have to be discovered by trial and error.

GEMView 2.24 supports GIF, IFF, Imagemagick, TIFF, BMP, GEM, ART, Tiny, Spectrum, Macpaint, Targa, JPEG, SUN, PAC, BMP, RLE, IMG/XIMG, NEO, Degas and Doodle format graphics files so you shouldn't have much trouble converting your pictures! You can save files in most formats, including TIFF, Targa and GIF, making it a very powerful tool for converting images of any kind. Great for DTP but it doesn't have *Imagecopy's* print facilities.



GEMView vies with *Imagecopy 2* for the best all-round image handler and converter.

There's another new utility, *Picswitch 1.01*, that offers some novel features such as histograms and brightness/contrast controls. It will load a wide variety of images but it only works in ST high resolution and saves monochrome image files.



Picswitch 1 is a brand new update for an old favourite.

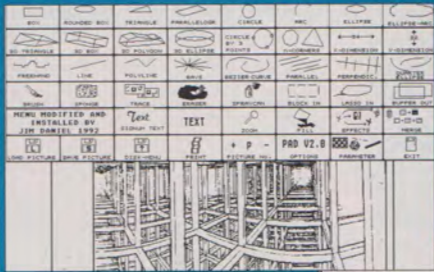
MONO MASTER

One of the oldest, but most highly respected, shareware bitmap art packages is *PAD*, a German product first released in 1989. A cut-down English manual has been provided by Floppystore PD library and the menus have also been translated into English making version 2.0 extremely useable.

PAD is related to a commercial program, *STAD*, and has an icon-based user interface which is fairly easy to use. It requires 1 MB or more of memory and runs only in monochrome (including ST high modes on the TT and Falcon). Load the program and you're soon looking at a large toolbox which contains some 46 icons with labels attached. Most selections are made using the left mouse button and cancelled using the right but there are comprehensive keyboard shortcuts too.

Although the scant documentation can hardly claim any tutorial material, at least it encourages experimentation and there are plenty of tools and special effects to discover in *PAD*. Up to 100 pictures can be stored in memory on a 4 MB machine and it will import Degas, Neochrome and IMG files as well as a few less useful ones like *STAD* and *Imagic*. For desktop publishers it can export pics as P13 or IMG files. It can also include GEM or Signum fonts in images, add special effects to scanned single bit images, such as outlining, and print to most 9 and 24 pin printers.

The latest version of the program is actually 2.4 and offers a slightly wider range of drawing tools, special effects and adjustable parameters and also adds IFF file import but as the documents are entirely in German, it's hard to define exactly what's new and what has simply changed! Version 3 of the program is promised quite soon and if my loose translation of "der documenten" is accurate, it will include TIFF, PCX, BMP and Macpaint file support plus a host of other new additions. It's shareware but well worth supporting if you need complex or high quality monochrome art at the lowest possible cost.



PAD 2 from Germany has an embarrassing array of features – embarrassing for many commercial competitors, that is.

The variety of
spraycan settings
says it all.

GRAB IT WHILE YOU CAN...

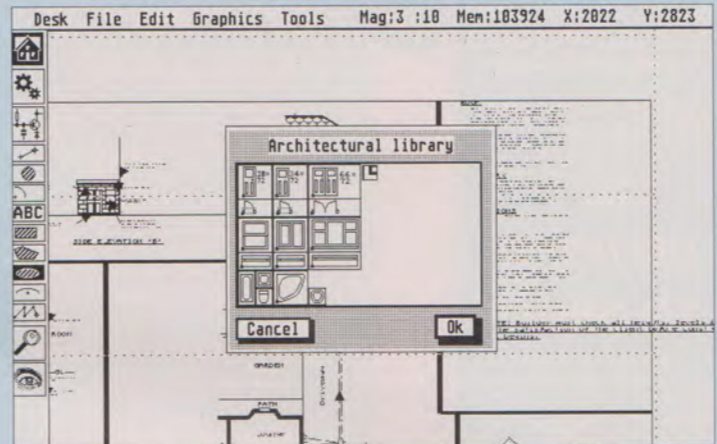
Plenty of users need to dump images of the screen to disk as a graphics file, whether to illustrate manuals or articles like this one, or simply to demonstrate bugs in software! All the screenshots you see in *ST Review* have to be "grabbed" in this way, often using utilities like *Imagecopy* or simple AUTO folder programs that hijack the <Alternate>-<Help> screen dump routine and output to file instead of the printer.

Two formats are absolutely vital – Degas and TIFF. Screen dumps done in Degas format can in some cases be used directly by the Apple Mac programs used in page makeup. Others have to be converted to TIFF format first. True colour screenshots from the Falcon, however, need to be done directly into TIFF, Targa or extended IMG format.

Not all grabbers work with every program. Some prevent <Alternate>-<Help> from working while others alter the palette so it's best to gather a collection of utilities for every occasion.

A REAL CAD...

Of course, we don't all want to paint pretty pictures or tart up scanned images. Some of you out there will be much more at home redesigning your living room or producing table plans for your sister's wedding. If that's the case you'll need a much more precise drawing package and while *Easy Draw 2* will probably do the job, there's another cheapie that will take you a step further called *Minidraft*. It's a low cost shareware CAD package that has all the basics and a fair few of the advanced facilities that grown-up CAD packages have. It can't exchange files with DTP programs, using its own format, but it is well worth a look.



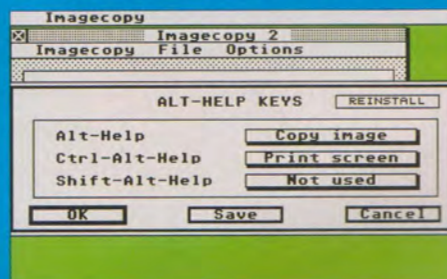
Minidraft is a fully-featured CAD package that costs under a tenner. Great for complex illustrations.

WHERE TO GET THEM FROM...

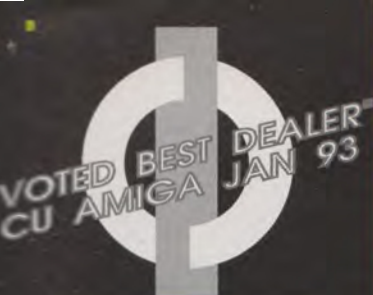
Art Gallery: ST Club Disk GRD.36
GEMView 2.24: Compuserve, CIX or your local BBS
Imagecopy Colour: ST Club, £14.95
Imagecopy 2: ST Club, £19.95
Metaview: ST Club Disk DMG.24
Minidraft: Compuserve, CIX or your local BBS
PAD: ST Club Disk PDE.07
Photochrome 3.0: Compuserve, CIX or your local BBS
Picswitch 1.01: Goodmans PDL Disk GD1917
Snap: ST Club Disk GRA.153
Speed of Light: Look on last month's cover disk!
Synthy Art: ST Club Disk DRG.51

Goodmans PDL is on 0782 335650 and the ST Club on 0602 410241. The latest versions of many programs are available on CIX and any that aren't can be quickly uploaded by one of the conference moderators. Why not join us on-line and download as many of these programs as you want?

Imagecopy 2 is undoubtedly the best of all as it can reinstate the <Alternate>-<Help> combination for programs like *Didot* that disable it, and it is Falcon-compatible too. Others include the tiny 488 byte AUTO folder program called *Snap* that sits waiting for a four key combination (<Shift>-<Shift>-<Control>-<Alternate>) before saving in Degas format. Don't expect to be able to grab commercial game screens though – specialist hardware is required for that!



The <Alternate>-<Help> combination can be controlled from within *Imagecopy 2*.



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STalker received high praise when we reviewed it.

This month, Graeme Rutt looks at how to set it up...

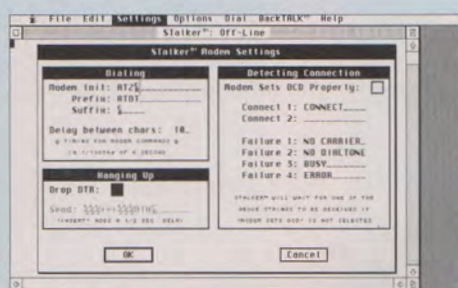
COMMS COACHING

STalker is the first commercial product to feature in this column, being available from Compo (0480 891819) for a modest £35. As you'd expect, *STalker* boasts a number of specialist features which just aren't found

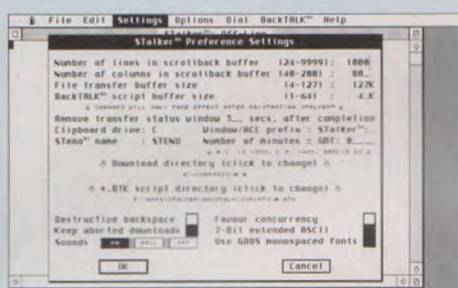
in its public domain and shareware brethren such as an extremely flexible script language, built-in transfer protocols and full background operation. This means that if you install *STalker* as a desktop acces-

sory you can use any other GEM program while *STalker* goes about its work – even transferring files. This is real power...

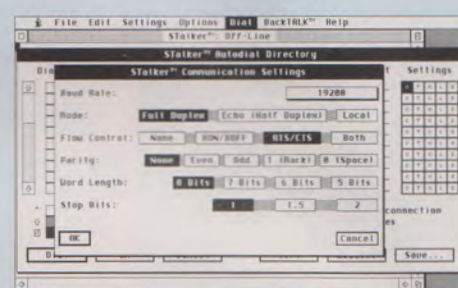
If you have any queries, then I can be reached on CIX as "Sabbath".



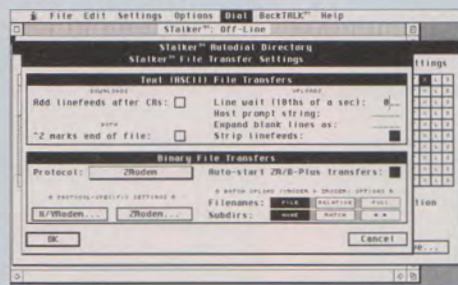
Select the "Modem Settings" option in the "Settings" drop down menu. Unless you have a particularly fussy modem, no changes will be required. The initialisation string "ATZ" resets your modem to its normal state so if your modem needs special settings remove the "Z" and replace it with whatever Hayes commands are required (refer to your modem manual). Also, if you are lumbered with a non-digital exchange you will have to remove the final "T" character from the "ATDT" dialling prefix.



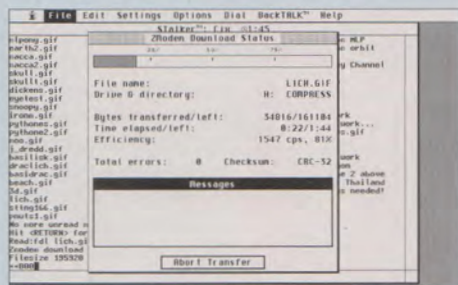
Next the "Preference Settings", under the same pull down menu. The first four fields control how much memory *STalker* uses – and conversely how little memory is left for other programs. The first field controls the number of lines of on-line text that will be available for review – in other words, how far you can scroll the on-line window back. I use a value of 1000 as a good compromise between the requirements of computer memory and my own memory. The third entry – file transfer buffer size – is also an important one; set this as close to 127 kilobytes as memory allows.



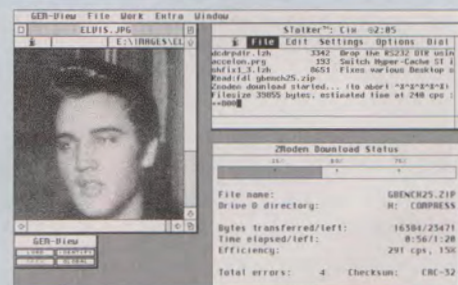
Before dialling a bulletin board you need to set up an entry in the auto-dialler. Click on "Autodial Directory" under the "Dial" pull down menu and type your favourite bulletin board's name and number into the slots provided. Then hit the small box with a "C" in it to the right of the screen. This will bring up the dialogue box shown above – set up your version in a similar manner (Full Duplex, RTS/CTS, Parity None, 8 Bits and 1 Stop Bit). Remember to set the baud rate to the highest value that both your modem and the bulletin board support.



Then hit the small box with an "X" in it. This brings up the "File Transfers" menu, shown above. Select ZModem in the pop-up menu that appears against "Protocol" and close the dialogue with an "Okay". You are now ready to dial a bulletin board, but first leave the Autodial Directory and "Save Configuration" under the "File" menu. Pull-down the "Dial" menu and you should see that your bulletin board's name has appeared in. Click on the name and within a few seconds you'll be online.



When *STalker* is set up correctly, downloading a file is extremely easy. Find the files area on your bulletin board, select a file to download and choose ZModem as your preferred transfer protocol. Everything is now automated; the transfer dialogue will be displayed and will show you the progress of the transfer. If you find that you are getting a lot of errors – especially on floppy disk systems – increase the size of the file transfer buffer in the "Preference Settings".



STalker is happily downloading files whilst I go about the task of displaying pictures!

It is impossible, in this column, to cover all of the different aspects of *STalker*. Using the above you should now be able to set up *STalker* effectively, create a list of all the bulletin boards you require, call them up and retrieve all the files you need. With only a little perseverance – and by reading the excellent manual – you can access all the other features that *STalker* provides and become much more productive.

In keeping with the theme of this issue, Ofir Gal introduces colour into his BASIC programming...

BASIC COLOURS!

This month's BASIC tutorial is about using colour graphics and animation. BASIC provides various graphics routine, but it's much better to use the operating system directly as the GEMVDI library gives access to the Virtual Device Interface part of TOS.

The VDI sports a selection of simple shapes such as boxes, polygons and circles that can easily be called and displayed on screen, or even output to a printer. In addition, *HiSoft BASIC* offers a few shortcuts that make the job of manipulating graphics that much easier.

PRIMITIVE DRAWINGS

The VDI has a selection of pre-defined graphical shapes that can be drawn by using the relevant TOS call. These shapes are referred to as the VDI Drawing Primitives. Listing 1 shows how to draw a series of boxes of different colours.

The program uses two VDI calls. The first is *vsf_color* (note the American spelling) which selects the fill colour. The value for this ranges between 0 to 15, but since 0 sets the fill colour to white, it is not used in the program.

The second call does the actual drawing. *v_bar* takes four parameters; the first pair define the x and y coordinates of the top left corner of the

box while the second pair define the bottom right corner. Passing *v_bar* the numbers 20,20,70,80 results in a rectangle with its top left corner at the top left area of the screen, measuring 50 (70-20) pixels wide and 60 (80-20) pixels high. The loop at the end of the program simply waits for a mouse click before quitting.

THE COLOUR PALETTE

All ST colour modes use a colour palette to produce a selection of four colours in medium resolution or 16 in low resolution. On the TT and Falcon, the same method is used to display up to 256 colours with the Falcon also featuring a true colour mode that can be used to display more than 65,000 colours simultaneously. This tutorial is based on ST low resolution which is 320 pixels wide, 200 pixels high and can display 16 colours using a palette of 512 colours on an STFM or 4096 colours on an STE.

Each of the 16 colours is assigned an RGB (Red, Green, Blue) value. In other words, the programmer is free to use any combination of the basic red, green and blue colours for colour creation. On the STE, the intensity of each of the primary colours can be set to 16 different levels; setting red to maximum and the

LISTING 1

```
'a short program to draw coloured boxes

DEFINT a-z
LIBRARY "gemvdi"

MOUSE -1      'hide the mouse

FOR i=1 TO 15
  vsf_color i
  v_bar 20+i*8,20+i*8,70+i*8,70+i*8
NEXT i

DO
  LOOP UNTIL MOUSE(2)
SYSTEM
```

other two colours to zero produces pure red. Take a look at the *Control Panel* and you will see that that is exactly how the colour red is produced. On the STFM, the resolution is lower with only 8 different levels of intensity being possible.

Since there are 8 possible values for each colour, the STFM can produce a total of 512 distinct colours (8x8x8), while the STE can display 4096 colours (16x16x16). While only 16 of these may be displayed at any time, the choice on the STE is that much greater. You will also notice that the *Control Panel* sliders have a range of 0 to 1000, a total of 1001

steps. Since only 8 or 16 are actually possible, the slider has to be moved 63 (or 125 on an STFM) steps to change the colour. The *Control Panel* simply uses a single VDI call to perform this trick with the palette control call, *vs_color*.

This takes four parameters; the colour index (a value between 0 and 15), and the red, green and blue intensities. The intensity range is identical to the *Control Panel*. Depending on which computer you are using, you will need to step the values accordingly. The example in Listing 2 works best on an STE because more colours are possible,



The ST and STE can only display up to 16 colours at any one time, two of which are black and white.

Listing 2

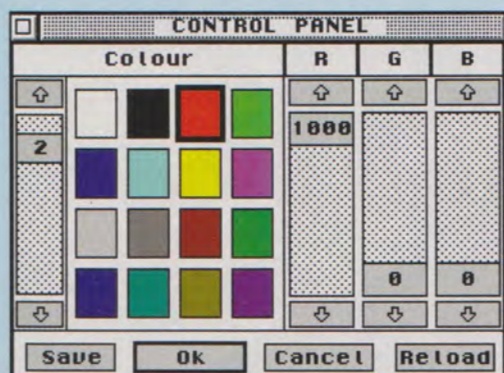
```
'change the palette

DEFINT a-z
LIBRARY "gemvdi","xbios"

vsf_color 2
v_bar 20,30,70,80      'set fill colour to red
                        'draw red box

DO
  FOR i=0 TO 1000 STEP 63
    vsync
    vs_color 2,1000,i,0  'or STEP 125 on STFM
                        'wait for next refresh
                        'change palette
  NEXT i
  LOOP UNTIL MOUSE(2)

vs_color 2,1000,0,0    'reset palette
```

The Control Panel default setting for red and yellow.

but can also run on an STFM. This little program draws a red box on screen and then modifies the palette, effectively changing the appearance. The XBIOS library plays an important role in this program.

Depending on the configuration, the ST refreshes the screen 50 or 60 times a second. There is no point in changing or drawing anything on screen between refreshes, because the effect will be invisible. The XBIOS routine *vsync* causes the program to wait for a screen refresh before executing the next command. Try running the program to see the effect.

Using this technique it is possible to display more than 16 colours at any time. It's quite easy to double this to 32 by quickly switching the palette from one mode to another. This will introduce some flicker, but at 60Hz this should barely be noticeable.

MOVING IMAGES

Table 1 lists the 16 colour indexes and their initial settings and serves as a good starting point for colour palette manipulation. It also lists the default settings which your program should restore before exit. This is especially important if a program modifies colours 0 and 1 as failure to restore these may make it impossible to read text on screen.

The illusion of image movement is created by displaying a sequence of static pictures. The main difficulty in computer animation is speed with the typical home computer simply taking too long to draw a screen. Accelerators like *NVDI* help, but do not solve the problem.

The program in Listing 3 draws a green box by setting the fill colour to 3. It then waits for a screen refresh and erases the box by simply redrawing it in white. It immediately draws another green box offset by one pixel to the right so creating the illusion of a box moving across the screen. Depending on the system configuration, the image movement can be very flickery and unpleasant.

Fortunately, a different method can be used to achieve the same effect but much faster. This is done by taking a "snapshot" of the box which is stored directly into memory and then copied with a slight offset to the right.

This may seem exactly the same as drawing the box, but in reality the drawing speed is **much** faster when using this method as no real drawing is performed – only chunks of screen memory are moved around. If your ST/STE has a Blitter chip, this function will be even faster.

The reason for wanting the drawing to be as fast as possible is that most programs don't just move a

green box! A game, for example, needs to move other images around the screen as well as responding to mouse or joystick input, and all at the same time.

The less time it spends on the actual drawing, the more time it has for other operations. Text scrolling is also performed in this way. In principle, it is possible to prepare all the images a program requires when it starts, store them in memory and then smoothly introduce them when needed.

GET AND PUT

HiSoft BASIC simplifies the process of saving screen images to memory and re-displaying them with two commands – *GET* and *PUT*. As the names suggest, *GET* stores the image and *PUT* places it on screen. The format for *GET*ing is:

```
GET (x1,y1)-
    (x2,y2),array_name
```

x1 and *y1* are the co-ordinates of the top left corner while *x2* and *y2* are the co-ordinates of the bottom right corner. An array must be defined which *GET* uses as a memory buffer to store the image. The array size must be large enough to fit the image; if it isn't, strange things may happen and the computer will probably crash. On the other hand, there is no point in setting an unnecessarily large buffer. There is a formula to calculate the exact size of the array required to fit any given image, the

NEW COMMANDS

v_bar x1,y1,x2,y2: A VDI call. Draws a rectangle with the top left corner at *x1,y1* and bottom right corner at *x2,y2*. The fill colour must be set with *vsf_color*.

vsf_color: A VDI call that sets the fill colour.

vs_color index,r,g,b: Sets the RGB values for the colour defined in index.

vsync: An XBIOS routine that waits for a screen refresh. Used to reduce flicker when moving images on screen.

vq_mouse b,x,y: A VDI call that places the position of the mouse in *x* and *y* and the button state in *b*.

GET: Stores a screen image to a buffer.

PUT: Places an image buffer back to the screen.

FNrandom&: An XBIOS routine that produces a random number.

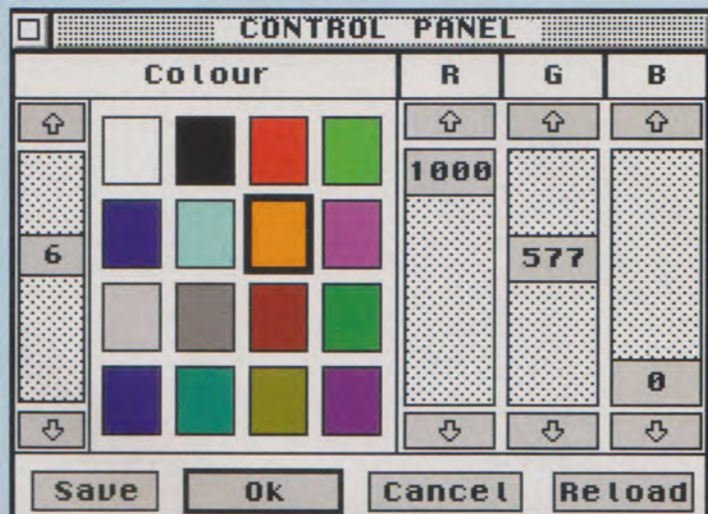
following one applying to ST low resolution:

```
array_size=4*(y2-y1+1)*
    ((x2-x1)\16+1)+5
```

This ensures that the *GET* buffer is exactly the size required with no waste of memory. *PUT*ing is a little simpler as only the top left corner co-ordinates need to be specified. The format is as follows:

```
PUT (x1,y1),array_name,PSET
```

The program in listing 4 is identical to listing 3, but instead of physically drawing the box at every stage, it just draws it once and lets *GET* and *PUT* do the rest. Also note that in listing 4, the co-ordinates are stored as constants. This makes no difference to the actual program, but makes the source code a little clearer. Since the blitting technique is very fast, there are plenty of things you could do in



Reducing the green content of yellow produces a brownish yellow.

Listing 3

```
'simple animation
```

```
DEFINT a-z
LIBRARY "gemvdi","xbios"
```

```
MOUSE -1
```

```
FOR i=0 TO 200
vsf_color 3
v_bar 10+i,30,80+i,150
vsync
vsf_color 0
v_bar 10+i,30,80+i,150
NEXT i
```

```
'set fill colour to green
'draw box
'wait for refresh
'set fill to white
'clear box
```


Listing 5

```
'mouse chaser

DEFINT a-z
LIBRARY "gemvdi","xbios"
```

```
MOUSE -1

CONST x1=20,y1=30,x2=40,y2=50
```

```
buf_size&=4*(y2-y1+1)*((x2-x1)\16+1)+5
DIM buf1(buf_size&),buf2(buf_size&)
```

```
vsf_color 3
v_bar x1,y1,x2,y2
GET(x1,y1)-(x2,y2),buf1
```

```
vsf_color 0
v_bar x1,y1,x2,y2
GET(x1,y1)-(x2,y2),buf2
```

```
DO
  vq_mouse button,mx,my      'get mouse state
  PUT (mx,my),buf1,PSET      'place image in mouse position
  IF button=1 THEN           'if left button is pressed
    r=FNrandom& MOD 1000     'get random values
    g=FNrandom& MOD 1000
    b=FNrandom& MOD 1000
    vs_color 3,r,g,b         'use random values on palette
  END IF
  vsync                      'wait for refresh
  PUT (mx,my),buf2,PSET      'clear box and go back to the top
LOOP UNTIL button=2

vs_color 3,0,1000,0          'reset palette
```

each cycle; changing the colour palette is just one of them.

MOUSE CHASE

The blit routine is even fast enough to chase the mouse and while the program in Listing 5 is not very useful as it stands, the principle can be

implemented into games software quite easily.

The program introduces another useful VDI call. Instead of using *MOUSE(0)* and *MOUSE(1)* to get the position of the mouse, and *MOUSE(2)* to get the state of the mouse buttons, *vq_mouse* gets all three in one go. *FNrandom&* is another XBIOS

Listing 4

```
'blit animation
```

```
DEFINT a-z
LIBRARY "gemvdi","xbios"
```

```
CONST x1=10,x2=80,y1=30,y2=150
```

```
MOUSE -1
```

```
buf_size&=4*(y2-y1+1)*((x2-x1)\16+1)+5
DIM buf1(buf_size&),buf2(buf_size&)
```

```
vsf_color 0                      'set fill colour to white
v_bar x1,y1,x2,y2                'draw white box
GET (x1,y1)-(x2,y2),buf2        'store white box
```

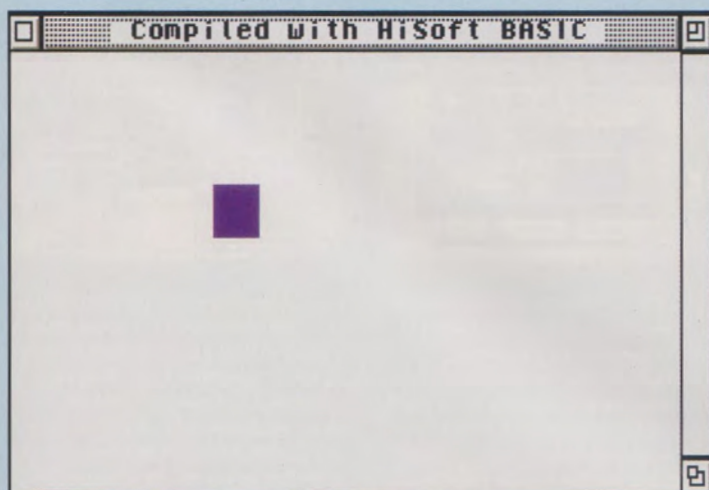
```
vsf_color 3                      'set colour to green
v_bar x1,y1,x2,y2                'draw green box
GET (x1,y1)-(x2,y2),buf1        'store green box
```

```
FOR i=0 TO 200
  PUT (x1+i,y2),buf1,PSET        'draw green box
  vsync                          'wait for screen refresh
  PUT (x1+i,y2),buf2,PSET        'erase box
NEXT i
```

number by 1000 and using the remainder, the program always gets a value between 0 and 1000 regardless of how large the random number actually is.

Moving the mouse shifts the image along as if it were glued to the mouse. If the left button is pressed, a random palette setting is used to modify the colour of the box. Remember, no drawing is actually involved – the box is only drawn at the beginning of the program and all movement is performed via blitting and colour changes by modifying the palette.

Next month there will be a little more about image manipulation, including loading Degas files and displaying them on screen.



The mouse chaser. Doesn't look like much when standing still, but move the mouse and see what happens...

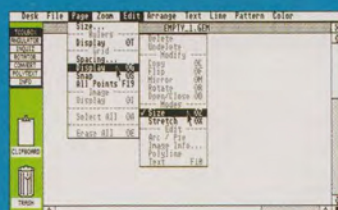
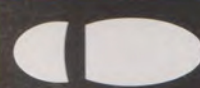
THE COLOUR PALETTE DEFAULT SETTINGS

Number	Colour	Red	Green	Blue
0	White	0	0	0
1	Black	1000	1000	1000
2	Red	1000	0	0
3	Green	0	1000	0
4	Blue	0	0	1000
5	Cyan	0	1000	1000
6	Yellow	1000	1000	0
7	Magenta	1000	0	1000
8	Light Grey	800	800	800
9	Dark Grey	500	500	500
10	Dark Red	500	0	0
11	Dark Green	0	500	0
12	Dark Blue	0	0	500
13	Dark Cyan	0	500	500
14	Dark Yellow	500	500	0
15	Dark Magenta	500	0	500

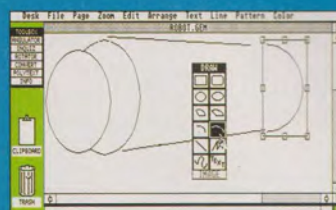
ANYONE FOR

The final part in our Easy Draw 2 tutorial sees Keith Berry using Easy Tools in tandem to create a rather sporting robot...

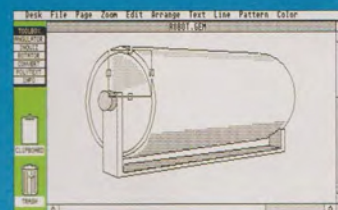
STEP BY STEP



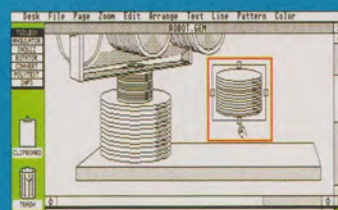
1 Load Easy Draw 2 with Easy Tools installed as a Desktop Accessory. Switch off the distracting Grid of dots (Alternate G) and select Size from the Edit menu (Alternate Z) as much of the drawing for this particular picture consists of constructing separate assemblies that have to be shrunk proportionately into their positions.



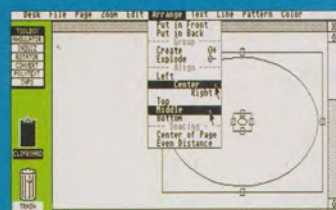
2 The picture is of an imaginary Ping Pong-playing Robot, and we begin by constructing its head using two ellipses, two lines and an edited Arc. Drawing standard Easy Draw shapes was well covered in the previous two ST Review tutorials and so has not been repeated.



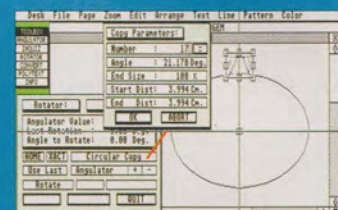
3 A bracket is drawn around the "head" using plain and patterned Polyline, and two more patterned Polyline (select None from the Line menu) are used for the two modelling shadows. A filled Arc adds a sheen to the side of the head and two patterned, overlapping Ellipses form the knob.



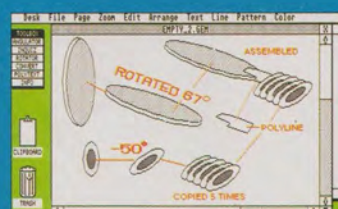
8 A segmented cylinder should be the result and this is again copied and resized (as shown in the inset) and the two are overlapped into position over the trolley plinth. This is a plain Polyline over a patterned rectangle. Two small Ellipses form the securing knob to the head bracket.



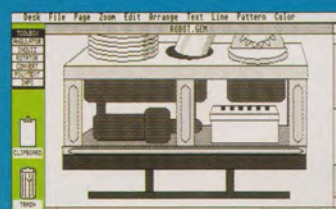
9 One large and one small Circle are drawn and made concentric with the aid of the Centre and Middle alignment options of the Arrange menu. It is useful to open the second window for a less cluttered view and completed assemblies are transferred to the main picture via the Clipboard.



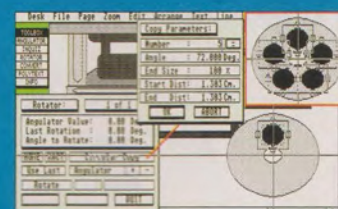
10 A small Polyline to represent a gear tooth is positioned at the top of the large circle and Rotator selected. Position the crosshair in the centre of the small circle. Select Circular Copy, enter 17 as the number and click on the "=" box when the angle is calculated for you.



15 This screenshot shows the make up of the robot's "hand" and its bat in the second window. In each case, two overlapping ellipses are rotated by the Rotator as before, by -50 and -67 degrees respectively. Make five copies of the spring "fingers" and add the handle - a plain Polyline.

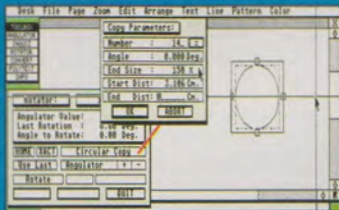


16 The trolley is added to the base and consists entirely of rectangles of varying patterns, some with rounded corners, depicting the housings of the launcher and head movements, the electric motor and the battery. Alternatively you could just hide the "works" behind panelling.

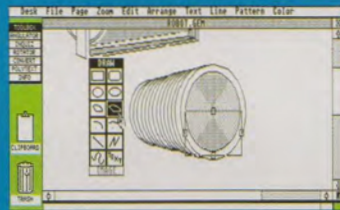


17 The wheel is constructed as the gearwheel, except that a black-filled circle is inside the wheel. Number 5 is selected and the "=" box clicked to obtain the angle. If you forget to centre the crosshairs, you cannot move them from the Copy box - you must Abort to Rotator first.

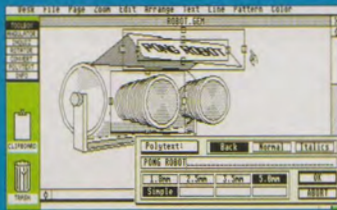
PING PONG?



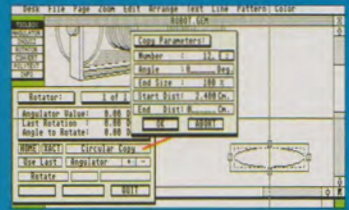
4 Draw an Ellipse, select Rotator from the Toolbox, click on Convert in Rotator's dialogue box and then move the Crosshair to the right as shown. Click on Circular Copy, enter 14 Number, 150% End Size and 0 End Dist. Click on OK and then Quit at the next dialogue box.



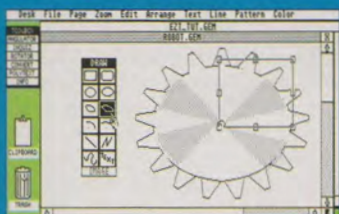
5 The result should be a telescoped series of ellipses as shown. Be prepared to repeat the last step several times, changing the parameters slightly, to obtain the desired effect. Add a light patterned Ellipse and a filled Arc with a Mirror Up copy to depict the glass of the lens.



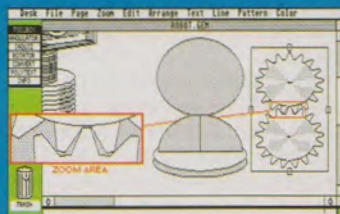
6 Move the lens into place and Copy (Alt C) another alongside, resizing both until they fit. The lens shade consists of two more Polyines. To add the "Pong Robot" label select Polytext, enter the text and slide the text out of the Clipboard and position and resize it to fit.



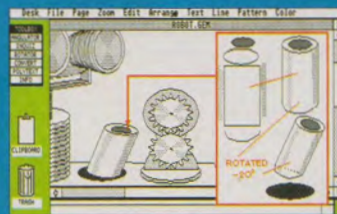
7 A similar procedure with Rotator creates the neck but this time the crosshair is set above the ellipse. Convert first and enter 12 as the Number. In this picture only horizontal and vertical copying has been used but you can make copies at any angle - experiment with various crosshair positions.



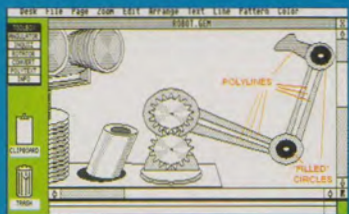
11 Click on OK, Quit and your gearwheel should appear with all of its teeth active. Press Alt + to group them. A light-patterned filled, No-line Mirrored Arc adds a metallic sheen. Alt A and Alt + groups the whole assembly which is moved via the Clipboard to the main window.



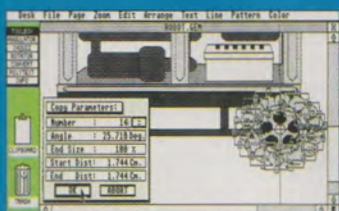
12 The arm bracket ("shoulder") consists of two Ellipses, a Circle and two filled Arcs. The gear wheel is copied and the two meshed together - Zoom Area helps - explaining the odd number of teeth. Group and resize so that the gears fit over the arm bracket on the base.



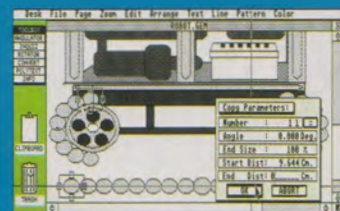
13 The ball launcher comprises a rectangle, two ellipses, two patterned polyines and an edited arc. These are assembled, grouped and the Easy Tools Rotator selected. Convert as usual and press the arrow keys to obtain -20. Click on Rotate and Quit. Add a dark ellipse and fit onto the base.



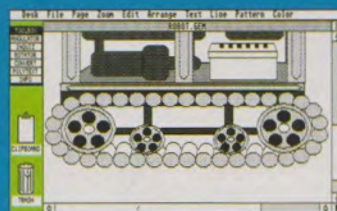
14 The robot's batting arm consists of Polyines as shown, with overlapping circles at the joints. Careful use of the Put In Back and Put In Front options of the Arrange menu are needed here. The ends of the Polyines are unimportant as they are hidden from view by the circles.



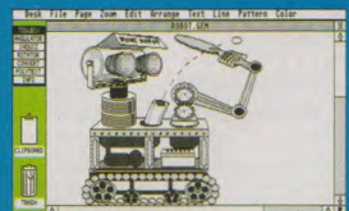
18 Part of the caterpillar track is produced as in the last screenshot except that a light-patterned circle is placed at the top of the outer edge of the wheel and the number 14 is used. You will not need all 14 - delete six as shown in the next screenshot.



19 The completed wheel with partial track is mirrored left and moved to the other end of the trolley. A copy of one of the grey circles is now copied by the Rotator as with the lens assembly. You may have to do this several times until the spacing looks right.



20 The straight piece of track is copied and both are moved into position. The wheel is copied, shrunk, and it and another copy are moved to the bottom of the struts. Ten copies of an edited Arc and individually drawn lines add visual depth to the bottom row of rollers.



21 A launched ball and its dotted trajectory are added to the picture, and a row of rivets along the top of the trolley have been copied using the Rotator. Easy Draw allows any component or group to be moved around and resized for best effect even at this late stage.

ASK THE EXPERTS

If you've got a problem, write it down and send it to our team of experts...

CHOOSING A COMPUTER



My problem is about choice. I want to buy a computer for sequencing and I play the odd game or two. My current set-up is MIDI keyboards and sound modules but my budget is quite tight. Having said that, I have seen *Cubase* software and that's what I'm going to go for.

I do understand that to get the best out of it, you need plenty of memory but, like I said, money is a restriction.

Can I buy a 520 STE with one megabyte or has it got to be a 1040? This is my very first step into the world of computers, so it's a little bit daunting. One dealer even told me the difference between the two models was the casing!

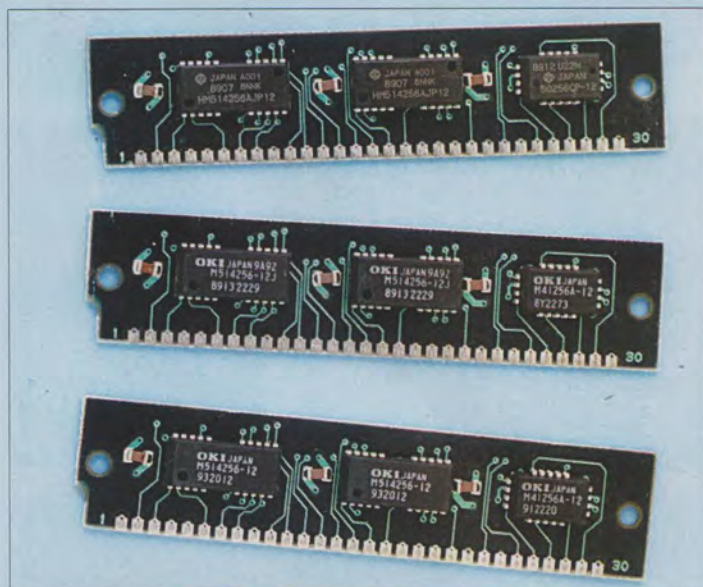
By the way, your issue number 13 was the very first computer magazine I have ever bought. I really enjoyed the whole thing and I'm hooked.

I hope you can help me make my choice.

Ted Kennedy, Waterloo, Liverpool

The dealer is almost correct – the only real difference between a 520 STE upgraded to one megabyte and a 1040 STE is the badge on the front!

The cheapest way to get a one megabyte STE is to buy a 520 and upgrade it to one megabyte. This computer uses SIMMs (Single In-line Memory Modules) and has four slots; when you buy a 520, two of these slots are filled with 250



SIMMs are used to upgrade an STE – but the correct configuration is essential...

kilobyte SIMMs giving you half a megabyte in total. Upgrading to one megabyte is simply a matter of adding a further pair of identical SIMMs to the two vacant slots – check out our memory upgrade feature in issue 14.

Upgrading further will entail discarding these SIMMs so it's important to get your memory configuration correct from the start. Cubase will function in one megabyte of RAM but it's a close run thing and my advice would be to go for two megabytes of RAM. Find a shop that will sell you a 520 STE upgraded to two megabytes as upgrading a brand new machine yourself will invalidate the warranty. VL

CACHE CONFUSION



In both your March and April issues, you have quoted the Plus Cache ST 16 MHz board as being sold by System Solutions for the price of £99.95 and £99.99 respectively.

Recently, I telephoned the firm at the given number and spoke with a gentleman who told me that the price of the item was £139.99.

Naturally, I questioned this and it was explained to me that your magazine prices were out of date and that these were for the month of February, and that the price of less than one hundred pounds was a special Christmas offer. Also he mentioned something about the fact

that the magazines are printed a month after the prices are set, hence they are always behind in this area. He further stated that if I cared to look at the recent issue of the same magazine, I would see the right price, which would be as quoted.

I had taken the firm at face value, and was guaranteed that the amount specified would not be debited from my Access account until the item was in stock. Here comes the rub, they could not tell me if they had it in stock! If I did not receive it in one week I was to ring back and then it would be perhaps three to four weeks delivery. When and how it was to arrive was, and is, a mystery. Furthermore, I can find no address for the firm or other adverts related to them.

Having scanned both April and May issues, I am at a loss as to what he is referring. April states £99.99 and is the last mention regarding this item. As you are being blamed for not quoting the right prices and are placing misleading information at the fingertips of your avid readers, I thought that you would like to be involved in this revelation of facts. The conversation led me to assume that they were the ones who supplied the prices for yourselves and that you have indeed quoted what you believe to be right at the time of printing.

Clarification regarding this matter would be appreciated.

C H Clucas, Glasgow, Scotland.

Ofir Gal reviewed the PlusCache 16 ST board in the March issue, which was written during January and on the shelves on the February 13, 1993. At that time, and for a

OUR DUSTY PANEL...

VIC LENNARD

Editor

Vic is the director of the UK MIDI Association and can help with all aspects of music and sequencing.

TONY KAYE

Deputy editor

Our very own overworked and underpaid (guess who wrote this... Ed.) deputy editor can help with the ST's operation, hardware and software along with upgrades and consumer problems.

OFIR GAL

Freelance writer

Ofir is the expert on HiSoft BASIC. He's the man that HiSoft ask when they have a programming problem (allegedly).

ANDREW WRIGHT

Freelance writer

A regular contributor to many ST and DTP magazines. If you need help with DTP or general printer problems, Andrew's your man.

few weeks afterwards, the board could indeed be bought from System Solutions for the price quoted.

In the April issue, on sale one month later, I showed you how it was fitted into the ST. In two different places, the price was quoted as being £129.99 plus fitting, which was the price you were quoted.

On the subject of stock, we spoke to Karl Brandt and he remembered telling you that there were a couple of units in stock, but he wasn't sure if they were allocated. If they were, then delivery would be about three to four weeks, but if one of them was available, you'd get it within a week. That sounds like fair service.

This situation appears to have stemmed from a misunderstanding that came about through a telephone conversation. The moral of this is to always ask for written confirmation of any information given in such a manner. Any problems then have a common source of reference. TK

SCREEN AND HEARD



**BUYING
ADVICE**

I am looking to buy a colour monitor. The thing is, I also want to buy a Falcon later in the year. Will a standard colour monitor, for example, a Philips, work on the Falcon or will I need to buy a VGA or SVGA screen? If so, would it work with my ST while I still have it?

I own an Atari SM125 mono monitor. Will this work on the Falcon? I would be grateful if you could answer these questions for me. Thanks for a great magazine.


**Andrew Mellor, Ramsey,
Cambridgeshire**

A Philips monitor will work quite happily with the Falcon, although, as with a television, the picture will flicker when you use the interlace modes. This is not a big problem at the moment, but some software may be difficult to use.

Your SM125 will work quite happily on the Falcon, but only in ST High resolution.

A VGA or SVGA monitor will work with the Falcon, but it will not easily work with your ST. Major modifications are needed, although there is a patch lead available from Ladbroke Computing to emulate a mono monitor for a cost of £19.95 which will work with some VGA monitors. See their advert for more details and their address. TK

BASICALLY SPEAKING



I recently bought a 520 STE upgraded to two megabytes. Contained in the pack was *First BASIC* and, as I am interested in programming, I have started to write small programs with it.

Unfortunately, I missed issue four of your magazine, the one which had *HiSoft BASIC* on the cover disks. However, I did get issue five containing the *BASIC Compiler*. Could you tell me if it is possible to compile programs written in *First BASIC* with the *HiSoft BASIC* compiler you gave away? If so, is it the same procedure as it is for programs written with *HiSoft BASIC*? When I try, I get the error message "Error library not found around line 0." I tried specifying the following libraries at the beginning of my program – GEMVDI, GEMAES and XBIOS, but unfortunately the error still occurs when trying to compile it.


Mark Deffley, Yardley, Birmingham

It's always nice to hear that readers have an interest in programming. First BASIC is not fully compatible with HiSoft BASIC 1.3 since it is based on version 2 of the compiler. However, you are very unlikely to come across these incompatibilities.

The reason you couldn't compile your program is that the compiler requires a file called HBASIC.LIB which appeared on the cover disk in issue 4.

This explains the error message you got when trying to compile. Likewise, it will not be able to include the GEMVDI, GEMAES and XBIOS libraries. You should also bear in mind that if your program does not use the additional libraries there is no need to specify them in your code. The only solution to your problem is to get HiSoft BASIC 2, which is an excellent package and includes many programming tools and detailed documentation which should help you write GEM applications and even desk accessories. OG

TELETEXT ON THE ST?



I have noticed very often in computer magazines a teletext adaptor for computers. I have seen one in action on a BBC Micro and have seen them advertised for PCs and other 8-bit machines, and have always wondered whether there is one for the Atari ST. I know the

machine is up to the standard. If a BBC can do it, then so can my ST with one arm tied behind his back! If there is one the market, then could you tell me, whether it is internally or externally fitted, if it needs any other kind of special hardware (for example, a Modem) and how much it is and where I can get it from.

Alternatively, if there was one made a long time ago, then please give me the precise details of it including the original price, so I can try and get one second hand.

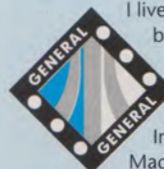
David Woodley,
Okehampton, Devon

There was a Teletext adaptor available some time ago from a company called Microtext. After a long search, we tracked them down in sunny Hampshire and they still supply the unit. It is an external module that only requires an aerial and it sells for £152 including VAT. An RS232 lead connects it to the ST and software is provided.

**For further details, call
Terry Cassell of Microtext
on 0705 595694. Mention
ST Review when you speak
to him.**

There was a version of Kuma's K-Spread called K-Spread T that could take information like Stocks and Shares from teletext and incorporate it in your documents. This, unfortunately, is no longer available. TK

OF GOOD CHARACTER



I live in Sweden and, being a faithful Atari ST user, I am a frequent customer in the many International Press Magazine stores of Stockholm, my home city. Here, I find all those great Atari magazines from Great Britain, *Atari ST Review*, *Atari ST User*, *ST Format* and so on. I can assure you that they make life a

lot easier to endure, especially as the Swedish Atari agents are hopeless when it comes to marketing these machines. It makes you feel a little less alone among all those PCs, Macs and Amigas that so totally dominate the market.

However, I didn't write to you to complain in the first place, but to ask you for help with a silly but nerve-racking little problem. The thing is that after trying several times to use the word processor *Write On* from the cover disk of your May issue, I finally gave up. It doesn't want to give me the very special letters we use in Scandinavia, not to mention Germany, namely the letters å, ä, ö and ü.

This is a real drawback for the program, but I am certain that there is a solution to it and that you can give us Northerners a helping hand about what to do. I even had the intention to upgrade to *That's Write*, as advertised in your magazine, but you must understand that I feel a little dubious whether it is worthwhile or not.

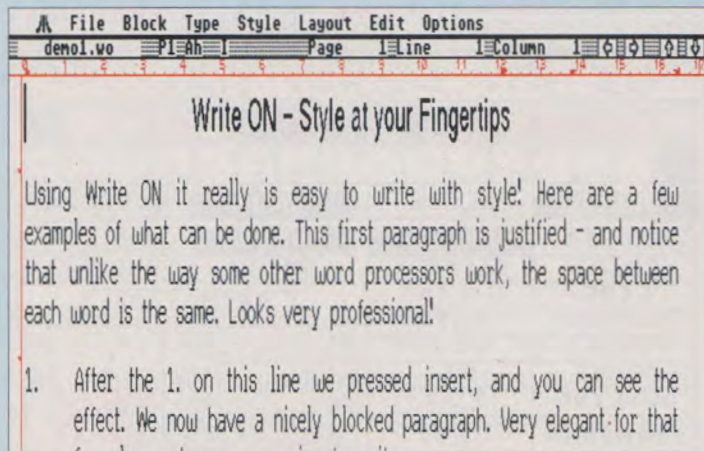
If you have the solution for my small, but irritating problem, I really hope it is not too late to order with the coupon in *ST Review* issue 13.

**Stig-Erik Karlsson,
Stockholm, Sweden**

ST Review is obviously produced for the English market, although we do appreciate that we have a wide following overseas. We get letters from all over the world including New Zealand, Australia, Scandinavia and even the Middle East.

I am pleased to say that foreign language key sets are available for both Write ON and That's Write and I have arranged for Compo Software to send you a disk containing the correct one for your country.

If any other readers require a different key set for their word processors, write to Compo Software, 7 Vinegar Hill, Alconbury Weston,



Write ON! from our May cover disk – foreign language sets are available...

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T.S.C.

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TSC, The Shareware Company: we don't do demos!

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It's time to exercise those printers or writing hands again and tell the editor your innermost thoughts. If you have something to say to the Atari world, drop a line to Vic Lennard...

LETTERS

DATA-BASICALLY...

Thank you for the recent (and rather flattering) review of my program *The Ultimate GFA Database* in your June issue. I thought I'd better put pen to paper regarding a couple of comments made about the program.

First, your title block suggested that the program is Falcon-compatible. I don't have access to a Falcon (all donations accepted!), but am informed by Floppyshop that the program will boot and run, but changing the music seems to corrupt the font. Without a Falcon I cannot test possible causes and fixes yet, so I suggest that Falcon owners do not try this, or switch the music off completely.

Second, as suggested in your article, some of the older and more obscure sources are difficult to come by, but if any users of the UGD are having trouble finding any sources then get in touch with me, and I will probably be able to supply copies. Also, I'd just like to say that the version reviewed was 1.5. 1.7 has now been released and a new version should be available by the middle of June.

Neil Warwick, Wokingham, Berkshire.

Glad you liked the review, Neil. Of course, the only reason we reviewed your program was because Steve Delaney up at Floppyshop ensured that we received it - other PD libraries please take note. It's also nice to see that Steve's on the ball with the minor Falcon incompatibility. While we try to inform readers whether a program is Falcon compatible or not, it's difficult to be certain that every aspect will work.

PLUGGING THE GOOD 'UNS!

Let me just say how much I like your magazine. I used to use *First Word Plus* to write letters, but now I have received another great program from your cover disk, *Write On*. I use that one now, as I have for this letter.

I have a half megabyte STFM which I think is great. I must say that the Amiga is a good machine, but the ST will always be ten levels higher. The ST is more of a business machine, but the Amiga is more of a games console with keys. I know someone who owns an Amiga and it keeps asking for the volume disk of a program, but the ST just whizzes

away and your file is loaded or saved.

Also, I have just bought *DMP BASIC* from DMP Software, which is a very good home-produced software house. Their prices are very reasonable and I have produced some entertaining demo programs with the BASIC. I have sent off for the *DMP BASIC Compiler*, which should be with me very shortly, if their previous service is anything to go by.

They supply a disk catalogue of their software, so if you send a disk and SAE to them, you'll get a list of some very worthwhile ST software.

Their address is: DMP Software, 89 Wolverhampton Road, Cadsall, Wolverhampton, WV8 1PL.

Again, thanks for the excellent magazine.

Martin Roads, Greenford, London.

Another unashamed plug for a software company, Martin. We're always glad to help. If DMP would like to send us some review copies of their products, we'll see what we can do to help from this end.

As for the old ST-Amiga argument, I think we're at the point where we know the strengths and weaknesses of the various computers. To be honest, if you were given a computer - any computer - you would endeavour to find the programs you needed for that machine. The fact that you choose to use an ST is good news for us as you buy our magazine!

ONE BORN EVERY MINUTE?

Once more, I've been suckered in. Each time I buy an Atari magazine complete with attached disk(s), I swear I won't do it again. Why should I pay for programs I don't want or need when any enthusiast with half a brain can find most of them in the PD catalogues?

There are exceptions. I have been looking for a new word processing program to take over from *First Word Plus* and the chance to try *Write On* was hard to resist. So I paid out the £3.50.

That brings me to the second complaint I have learned to read the instructions about how to get the disks working because of disasters in the past. This time, no joy.

I tried as instructed to make a copy



APRIL FOOL

I am a keen reader of Atari ST Review, but like any enthusiast, I am always on the look-out for hoaxes in the April issue.

I must say that I am extremely impressed with what you have done in the April issue. I have seen some good April Fools in my time, but this takes the cake.

Despite being very much on the alert, I could not, at first, decide which of the several items was the hoax. Was it the 12MB RAM upgrade for the ST article? What a laugh – we all know that this is impossible. Or is it?

Or was it the story about the Falcon being shown to the public at Wembley? Surely not.

No. For my money, the big joke of the April issue was the bit on page six. A glued-in Stop Press saying that you have been taken over by Europress.

Ho, ho, ho! That's a good one. Taken over by that crowd? Never! Mind you, if it's true, I'll never buy another Atari ST Review. Colin Laycock, Kidlington, Oxfordshire.



Unfortunately you've mixed up your copies, Colin! Yes, the "glued-in Stop Press" was in the April issue but as you now know, this was no April Fool. The 12MB RAM upgrade was in the May issue, but again this was a true story – although you could have picked us up on the "8 MHz" memory upgrade competition we ran. How embarrassing...

And the Falcon being shown at Wembley? This was from the June issue and if you think we have the technology to fake a set

of photos like that, you've got another thought coming. So are we now owned by Europress? We certainly are. And why have I made this letter of the month? To prove that I do not

hold a grudge against someone who has obviously put pen to paper before engaging his brain! On the other hand, if you're true to your word, you won't be reading this issue of ST Review anyway...



You missed this boo-boo...

You really can get 12MB of memory in an STE!

using the included WO_HELP.PRG, but a TOS #35 error kept coming up. OK, since I wanted to just try the WP program, I used the master disk, but yet another disaster I was told that there wasn't enough memory! Now the master won't boot and there are lots of empty files.

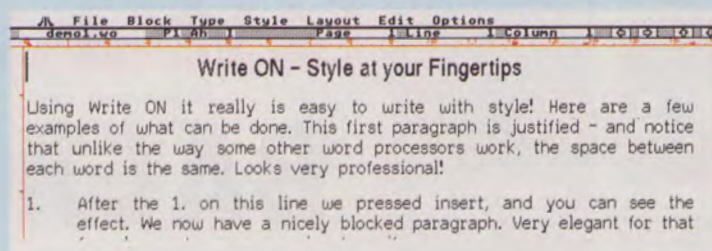
However, thanks for cutting down the games junk and starting to look more like a serious magazine. It was getting difficult to find reviews of hardware and software without wading through reams of the other stuff.

Finally, you could cut the price even further by getting rid of the other disk.

Frank Ayton, Barnsley, South Yorkshire.

When was the last time you saw one of our main cover disk programs in a PD library, Frank? If you do, let us know and we'll investigate because the main programs on most of our issues have been, and still are, commercial software. Even when we haven't been able to provide a commercial program, there is still exclusive material that you won't find in a PD library.

The installation instructions for Write ON! were as clear as they could be; less than half a dozen people called with



Write ON – a good word processor if you install it correctly.

problems. The error you report could have been caused by you attempting to write back to the cover disk, which is also pointed to by the empty files you mention. It is also possible that you simply had a corrupted disk. Either way, call Composit to have the problem sorted out.

We like to think that we've got the balance between games, features and reviews about right, although this depends on what products are out there to be reviewed from issue to issue.

As for the possibility of returning to two cover disks, no dice. Rather than fill two disks with poor quality programs, we feel it's better to give you a corker of a disk each month. And we've cut the cover price accordingly...

SHARE IT AROUND

I have written to you on the subject of shareware. As I read your magazine, I see that the matter is covered, but can I add a suggestion?

When you review a piece of shareware, please review it on its own and could you also print the name and address of where the registration fee is to be sent? While I am aware that PD libraries do already distribute that information on their disks, if there is something that the reader likes the sound of, would they not be better off to write to the author and register right away?

In many cases I have found that I like the sound of a piece of shareware, but first I have to send off to the library to get the disk, to get the disk, to register. With the method I am suggesting it would, a lot of the time, cut out all this waiting.

A R Hamer, Irby, Wirral

The idea of shareware is to "try before you buy", so by obtaining the full software from the author directly, this opportunity is lost. Reviews are subjective by nature and while you can often rely on someone else's judgement, there is nothing like trying a program for yourself and drawing your own conclusions.

Most software authors do not want to get involved in the day-to-day rigmarole of receiving letters and sending out disks, hence the creation of the various public domain libraries. Just think how difficult it would be to obtain budget programs without such entities. By sending a small sum to them for a shareware version, you help to maintain a very useful structure.

GOT SOMETHING TO SAY?

If you want to tell us how well (or how badly!) you think we are doing or you just have something you want to get off your chest, drop us a line. After all, it's your magazine. Let us know what you'd like to see in it or what you think we should do to improve the content. Perhaps you'd like to learn about other programming languages or see something specific covered in our Step-By-Step guides?

Write to: Points Of View, Atari ST Review, Europa House, Adlington Park, Macclesfield, SK10 4NP.

Please do not send stamped-addressed envelopes as we are unable to give personal replies. All mail received is considered for publication unless otherwise stated and we reserve the right to edit letters where necessary without altering the context. Please note that although we do our best to answer every letter, we cannot guarantee inclusion or acknowledgement.

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this puzzle!

The editor's decision is final. No correspondence can be entered into.

Hidden in this wordsearch are 14 words to do with colour – and no, “colour” isn’t one of them!

All you have to do is find the words and send us a list of them on a postcard or on the back of a sealed envelope. Closing date is August 22. All correct solutions will be put into the *ST* Review top hat, and if your

name is on the card that we pull out, you’ll receive a cheque for £25!

Send all entries to:

ST Review Blitter 16, Europress Enterprise Ltd, Europa House, Adlington Park, Macclesfield SK10 4NP.

Remember, the closing date is August 22 so get working now...

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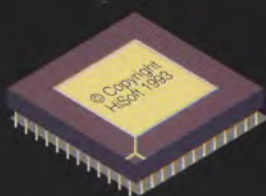
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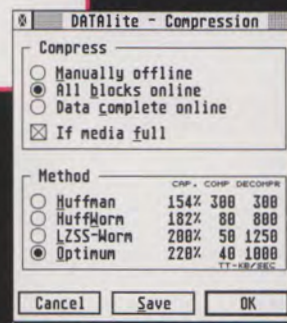
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